PATENTS
9043MXL

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Applicants	:	David V. Zyzak et al.
Application No.	:	10/606,137 Confirmation No. : 3971
Filed	:	June 25, 2003
For	:	METHOD FOR REDUCING ACRYLAMIDE IN FOODS, FOODS HAVING REDUCED LEVELS OF ACRYLAMIDE, AND ARTICLE OF COMMERCE
Art Unit	:	1761
Examiner	:	Keith D. Hendricks

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

EXPRESS MAIL CERTIFICATION

Express Mail Label No. EV619619415US

Date of Deposit: August 22, 2005

I hereby certify that this certification and the following papers:

1. Request for Continued Examination Transmittal Form (in duplicate);
2. Amendment Pursuant to 37 C.F.R. § 1.116;
3. Five (5) Terminal Disclaimers;
4. Suggestion for Interference (with Appendices A-D);
5. Declaration of David Vincent Zyzak;
6. Declaration of Kwan Y. Lee;
7. Declaration of Deborah K. Ewald
8. Declaration of Janice N. Batchelor; and
9. Form PTO/SB/17 (Fee Transmittal) (in duplicate),

are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. § 1.10 on the date indicated above and are addressed to Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Name: Isatta B. Smith

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PTO/SB/17 (12-04v2)
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL for FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($)1,500.00

Complete If Known	
Application Number	10/606,137 (Conf. No. 3971)
Filing Date	June 25, 2003
First Named Inventor	David V. Zyzak et al.
Examiner Name	Keith D. Hendricks
Art Unit	1761
Attorney Docket No.	9043MXL

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 06-1075 (Order No. 0040471-0006) Deposit Account Name: Fish & Neave

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below
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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
		Small Entity		Small Entity		Small Entity	
Application Type	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fees Paid ($)
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims		Extra Claims	Fee ($)		Fees Paid ($)
63	- 20 or HP =	13	x 50.00	=	650.00

HP = highest number of total claims paid for, if greater than 20

Indep. Claims		Extra Claims	Fee ($)		Fees Paid ($)
13	- 3 or HP =	1	x 200.00	=	200.00

HP = highest number of independent claims paid for, if greater than 3

Multiple Dependent Claims Fee ($)	Fee Paid ($)
360.00	.00

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets		Extra Sheets		Number of each additional 50 or fraction thereof		Fee ($)		Fee Paid ($)
	- 100 =		/50=		(round **up** to a whole number)		x =	

4. OTHER FEE(S)

	Fee Paid ($)
Non-English Specification, $130 fee (no small entity discount)	
Other (e.g., late filing surcharge): Five terminal disclaimers	650.00

SUBMITTED BY

Signature		Registration No. 31,069 (Attorney/Agent)	Telephone 212.596.9000
Name (Print/Type)	Jeffrey H. Ingerman		Date 8/22/05

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No. EV619619415US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	10/606,137	Confirmation No.: 3971
Applicants	:	David V. Zyzak et al.	
Filed	:	June 25, 2003	
TC/A.U.	:	1761	
Examiner	:	Keith D. Hendricks	
Docket No.	:	9043MXL	
Customer No.	:	1473	
For	:	METHOD FOR REDUCING ACRYLAMIDE IN FOODS, FOODS HAVING REDUCED LEVELS OF ACRYLAMIDE, AND ARTICLE OF COMMERCE	

Mail Stop RCE
Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

New York, New York 10020
August 22, 2005

SUGGESTION OF INTERFERENCE WITH ELDER ET AL. APPLICATION NO. 10/247,504, PURSUANT TO 37 C.F.R. § 41.202

Sir:

The purpose of this Paper is to provoke an interference between claims 1-63 of this application and claims 1-8 and 11-15 of Elder et al. U.S. Patent Application No. 10/247,504 ("the Elder '504 application").

I. INTRODUCTION AND OVERVIEW

Applicants are seeking to provoke an interference between pending claims 1-63 of this application and pending and allowed claims 1-8 and 11-15 of the Elder '504 application. The Elder '504 application was filed on September 19, 2002, or just one day before Applicants' earliest effective filing date of September 20, 2002.

Accompanying this Suggestion of Interference are the supporting Declarations of Dr. David Vincent Zyzak, Dr. Kwan Y. Lee, Deborah K. Ewald and

Janice N. Batchelor, and related exhibits. This suggestion is submitted along with a Request for Continuing Examination, an Amendment Pursuant to 37 C.F.R. § 1.1116, and related terminal disclaimers.

Applicants submit that Applicants' claims 1-63 are otherwise allowable and that an interference between Applicants' application and the Elder '504 application should be promptly declared.

The general subject matter of this proposed interference relates to a method for reducing the amount of acrylamide in thermally processed foods, and foods produced by such a method. More specifically the subject matter relates to a method for reducing the amount of acrylamide in thermally processed foods by adding asparaginase to an asparagine-containing food material to inactivate asparagine, and heating the food material to form a thermally processed food product.

Applicants' application discloses and claims methods for reducing the level of acrylamide in a food material that comprise adding an asparagine-reducing enzyme such as asparaginase to the food material before heating. Applicants' application also discloses and claims food products having reduced levels of acrylamide and an article of commerce that communicates to the consumer that a food product has reduced or low levels of acrylamide or asparagine. Applicants' application contains examples of the preparation of various food products having reduced levels of acrylamide.

The Elder et al. '504 application discloses and claims a method for the reduction of the amount of acrylamide in thermally processed foods comprising providing a food ingredient that contains free asparagine, adding an asparaginase solution to that ingredient, thereby inactivating asparagine in the ingredient, using the ingredient as a component in a food mixture and heating the food mixture to form a thermally

processed food (claim 1). The only relevant example in the Elder '504 application compared the resultant acrylamide levels in heated samples that consisted of either: (1) a solution containing glucose, asparagine and a heated (and hence deactivated) asparaginase solution (a control), or (2) a solution containing glucose, asparagine and an active asparaginase solution. The Elder '504 application reports that "[this experiment establishes that reducing the concentration of asparagine, or the reactive nature or [sic; of] asparagine will reduce acrylamide formation." (Elder '504 application, p. 8).

II. THIS SUGGESTION OF INTERFERENCE

A. Identification Of The Application With Which Applicants Seek An Interference (37 C.F.R. § 41.202(a)(1))

Applicants respectfully seek an interference with Elder et al. U.S. Application No. 10/247,504, filed on September 19, 2002 ("the Elder '504 application"). The Elder '504 application was filed just one day before Applicants' earliest effective filing date of September 20, 2002.

B. Identification Of The Claims That Applicants Believe Interfere (37 C.F.R. § 41.202(a)(2))

Applicants believe that an interference should be declared based on the count proposed below and involving Applicants' claims 1-63 and Elder et al. claims 1-8 and 11-15.

C. Presentation Of A Proposed Count (37 C.F.R. § 41.202(a)(2))

Applicants propose the following "or" Count that consists of claim 1 or claim 10 from Applicants' application or claim 1 from the Elder '504 application.

Applicants' Claim 1

A method for reducing the level of asparagine in a food material, comprising adding an asparagine-reducing enzyme to the food material before heating.

OR

Applicants' Claim 10

A method for reducing the level of acrylamide in food, comprising:

(1) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;

(2) optionally mixing the enzyme with the food material;

(3) allowing a sufficient time for the enzyme to react with the asparagine;

(4) optionally deactivating or optionally removing the enzyme; and

(5) heating the food material to form the finished food product.

OR

Elder '504 application Claim 1

A method for the reduction of acrylamide in thermally processed foods comprising the steps of:

(a) providing a food ingredient that contains free asparagine;

(b) adding an asparaginase solution to the food ingredient, thereby inactivating asparagine in the asparagine-containing food ingredient;

(c) using said food ingredient as a component in a food mixture; and

(d) heating said food mixture to form a thermally processed food.

D. Elder et al.'s Claims 1-8 and 11-15 Correspond To The Proposed Count (37 C.F.R. § 41.202(a)(2))

Applicants understand that the Elder '504 application has pending claims 1-8 and 11-15, that the Office has stated are allowable. But, due to a potential interference, ex parte prosecution of those claims was suspended for six months on November 2, 2004, and still remains suspended.

Claims 1-8 and 11-15 of the Elder '504 application are reproduced in the table in Section II.G. Claims 1-8 and 11-15 of the Elder '504 application define a single invention and should all be designated as corresponding to Applicants' proposed Count 1.

E. Applicants' Claims 1-63 Correspond To The Proposed Count (37 C.F.R. § 41.202(a)(2))

Applicants' pending claims 1-63 should be designated as corresponding to proposed Count 1. These claims are shown in the attached Appendix B and are presented herewith by Applicants in the accompanying Amendment Pursuant to 37 C.F.R. § 1.116.

Applicants' claims 1-56 stand rejected as being obvious over the published Elder '504 application and Applicants' new claims 52-63 are very similar to claims 1-8 and 11-15 of the Elder '504 application. Thus, Applicants' claims 1-63 should be designated as corresponding to proposed Count 1.

F. Claim Chart Comparing Claims Of Each Party To Proposed Count 1 (37 C.F.R. § 41.202(a)(3))

Applicants' proposed Count 1 is an "or" count consisting of claim 1 or claim 10 from Applicants' application or claim 1 of the Elder '504 application. The chart

below compares Applicants' claims 1, 10 and 51 and claim 1 of the Elder '504 application to Applicants' proposed Count 1 and demonstrates why the claims interfere within the meaning of 37 C.F.R. § 41.203(a).

APPLICANTS' PROPOSED COUNT 1	**APPLICANTS' CLAIMS**
Applicants' Claim 1:	***Applicants' Claim 1:***
A method for reducing the level of asparagine in a food material, comprising adding an asparagine-reducing enzyme to the food material before heating.	Applicants' Claim 1 is identical to this first alternative embodiment of Applicants' Proposed Count 1.
OR	
Applicants' Claim 10:	***Applicants' Claim 10:***
A method for reducing the level of acrylamide in food, comprising:	Applicants' Claim 10 is identical to this second alternative embodiment of Applicants' Proposed Count 1
(1) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;	
(2) optionally mixing the enzyme with the food material;	
(3) allowing a sufficient time for the enzyme to react with the asparagine;	
(4) optionally deactivating or optionally removing the enzyme; and	
(5) heating the food material to form the finished food product.	
Elder '504 Application Claim 1:	***Applicants' Claim 51 (differences are underlined):***
A method for the reduction of acrylamide in thermally processed foods comprising the steps of:	A method for the reduction of acrylamide in thermally processed foods comprising the steps of:

APPLICANTS' PROPOSED COUNT 1	APPLICANTS' CLAIMS
(a) providing a food ingredient that contains free asparagine;	(a) providing a food material that contains free asparagine;
(b) adding an asparaginase solution to the food ingredient, thereby inactivating asparagine in the asparagine-containing food ingredient;	(b) adding an asparaginase solution to the food material, thereby inactivating asparagine in the asparagine-containing food material;
(c) using said food ingredient as a component in a food mixture; and	(c) using said food material as a component in a food mixture; and
(d) heating said food mixture to form a thermally processed food.	(d) heating said food mixture to form a thermally processed food product.

APPLICANTS' PROPOSED COUNT 1	ELDER '504 APPLICATION CLAIMS
Applicants' Claim 1:	***Elder '504 Application Claim 1:***
A method for reducing the level of asparagine in a food material, comprising adding an asparagine-reducing enzyme to the food material before heating.	A method for the reduction of acrylamide in thermally processed foods comprising the steps of: (a) providing a food ingredient that contains free asparagine; (b) adding an asparaginase solution to the food ingredient, thereby inactivating asparagine in the asparagine-containing food ingredient; (c) using said food as a component in a food mixture; and (d) heating said food mixture to form a thermally processed food.
OR	
Applicants' Claim 10:	***Elder '504 Application Claim 1:***
A method for reducing the level of acrylamide in food, comprising:	A method for the reduction of acrylamide in thermally processed foods comprising the steps of:
(1) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;	(a) providing a food ingredient that contains free asparagine;

APPLICANTS' PROPOSED COUNT 1	ELDER '504 APPLICATION CLAIMS
(2) optionally mixing the enzyme with the food material;	(b) adding an asparaginase solution to the food ingredient, thereby inactivating asparagine in the asparagine-containing food ingredient; (c) using said food ingredient as a component in a food mixture; and
(3) allowing a sufficient time for the enzyme to react with the asparagine;	
(4) optionally deactivating or optionally removing the enzyme; and	
(5) heating the food material to form the finished food product.	(d) heating said food mixture to form a thermally processed food.
OR	
Elder '504 Application Claim 1:	***Elder '504 Application Claim 1:***
A method for the reduction of acrylamide in thermally processed foods comprising the steps of:	Elder '504 Application Claim 1 is identical to this third alternative embodiment of Applicants' Proposed Count 1.
(a) providing a food ingredient that contains free asparagine;	
(b) adding an asparaginase solution to the food ingredient, thereby inactivating asparagine in the asparagine-containing food ingredient;	
(c) using said food ingredient as a component in a food mixture; and	
(d) heating said food mixture to form a thermally processed food.	

G. Showing Why The Parties' Claims Interfere (37 C.F.R. § 41.202(a)(3))

An interference should be declared between Applicants' claims 1-63 and claims 1-8 and 11-15 of the Elder '504 application. As explained in Section II.H below, Applicants are the prior inventor of the subject matter of Elder's claims.

37 C.F.R. § 41.203(a) provides:

> (a) Interfering subject matter. An interference exists if the subject matter of a claim of one party would, if prior art, have anticipated or rendered obvious the subject matter of a claim of the opposing party and vice versa.

The chart in the previous section shows why at least Applicants' claims 1, 10 and 51 interfere with claim 1 of the Elder '504 application, as the subject matter of those claims would, if prior art, have either anticipated or rendered obvious the subject matter of the other party's claims and vice versa.

Applicants claims 1-50 stand rejected as being obvious over the published Elder '504 application because, according to the examiner, the Elder '504 application "discloses a method for reducing the amount of acrylamide in thermally processed foods" by contacting asparagine with the enzyme asparaginase (February 23, 2005, Office action, p. 4), as claimed by Applicants (claim 1). Thus, because claims 1-8 and 11-15 of the Elder '504 application claim such a method, then Applicants' rejected claims 1-50 interfere with those claims.

The following chart compares Applicants' new claims 51-63 and Elder's claims 1-8 and 11-15. Applicant's new claims 51-63 are patterned closely after Elder claims 1-8 and 11-15. Thus, this comparison shows why those claims interfere (the differences in languages between the two sets of claims are underlined):

APPLICANTS' NEW CLAIMS 51-63	ELDER '504 APPLICATION CLAIMS
Claim 51 (new): A method for the reduction of acrylamide in thermally processed foods comprising the steps of:	Claim 1: A method for the reduction of acrylamide in thermally processed foods comprising the steps of:
(a) providing a food material that contains free asparagine;	(a) providing a food ingredient that contains free asparagine;
(b) adding an asparaginase solution to the food material, thereby inactivating asparagine in the asparagine-containing food material;	(b) adding an asparaginase solution to the food ingredient, thereby inactivating asparagine in the asparagine-containing food ingredient;
(c) using said food material as a component in a food mixture; and	(c) using said food ingredient as a component in a food mixture; and
(d) heating said food mixture to form a thermally processed food product.	(d) heating said food mixture to form a thermally processed food.
Claim 52 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises primarily a carbohydrate.	Claim 2: The method of reducing acrylamide formation in thermally processed foods of Claim 1 wherein the food ingredient comprises primarily a carbohydrate.
Claim 53 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material is selected from the group comprising rice, wheat, corn, potato and oats.	Claim 3: The method of reducing acrylamide formation in thermally processed foods of Claim 1 wherein the food ingredient is selected from the group comprising rice, wheat, corn, barley, soy, potato and oats.
Claim 54 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises potato.	Claim 4: The method of reducing acrylamide formation in thermally processed foods of Claim 1 wherein the food ingredient comprises potato.
Claim 55 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the asparagine-containing food material further comprises at least one other amino acid.	Claim 5: The method of reducing acrylamide formation in thermally processed foods of Claim 1 wherein the asparagine-containing food ingredient further comprises at least one other amino acid.

APPLICANTS' NEW CLAIMS 51-63	ELDER '504 APPLICATION CLAIMS
Claim 56 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 55 wherein the at least one other amino acid is lysine.	Claim 6: The method of reducing acrylamide formation in thermally processed foods of Claim 5 wherein the at least one other amino acid is lysine.
Claim 57 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the inactivating step (b) comprises adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar.	Claim 7: The method of reducing acrylamide formation in thermally processed foods of Claim 1 wherein the inactivating step (b) comprises adding an asparaginase solution to the asparagine-containing food ingredient in the presence of a simple sugar.
Claim 58 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 57 wherein the simple sugar comprises glucose.	Claim 8: The method of reducing acrylamide formation in thermally processed foods of Claim 7 wherein the simple sugar comprises glucose.
Claim 59 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food mixture is heated at step (d) to a temperature of at least about 121°C.	Claim 11: The method of reducing acrylamide formation in thermally processed foods of Claim 1 wherein the food mixture is heated at step (d) to a temperature of at least 80°C.
Claim 60 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the thermal processing of the food mixture of step (d) occurs at temperatures between about 121°C and about 191°C.	Claim 12: The method of reducing acrylamide formation in thermally processed foods of Claim 1 wherein the thermal processing of the food mixture of step (d) occurs at temperatures between 100°C and 205°C.
Claim 61 (new): A food produced by the method of Claim 51.	Claim 13: A food produced by the method of Claim 1.
Claim 62 (new): The food of Claim 61 wherein said food comprises potato.	Claim 14: The food of Claim 13 wherein said food comprises potato.
Claim 63 (new): The food of Claim 62 wherein said food comprises potato chips.	Claim 15: The food of Claim 14 wherein said food comprises potato chips.

H. Explanation Of Why Applicants Will Prevail On Priority (37 C.F.R. §§ 41.202(a)(4) and 41.202(d) and (e))

Applicants will prevail on priority under 35 U.S.C. § 102(g) because Applicants are the prior inventors of the subject matter at issue in the proposed interference.

The Elder '504 application was filed on September 19, 2002, or just one day before Applicants' earliest effective filing date of September 20, 2002.

Submitted herewith are the declarations of Dr. David Vincent Zyzak, Dr. Kwan Y. Lee, Deborah K. Ewald and Janice N. Batchelor, together with accompanying exhibits, which demonstrate that Applicants conceived and actually reduced to practice the invention of Applicants proposed Count 1 on or before August 8, 2002, or over a month prior to Elder's September 19, 2002, filing date.

As demonstrated in these declarations and exhibits, on August 2, 2002, Dr. Zyzak, one of the named inventors on Applicants' application, performed an experiment using mashed potatoes as the food material to demonstrate the effect of adding asparaginase to the food material before heating on the level of asparagine in the heated food material and on reducing the level of acrylamide in the resultant heated food material.

This experiment is fully corroborated by Dr. Kwan Y. Lee, who reviewed Dr. Zyzak's notebook on August 9, 2002, by Deborah K. Ewald and Janice B. Batchelor, who analyzed the samples prepared by Dr. Zyzak, and by the attached Exhibits that recorded their work.

Ms. Ewald determined the levels of acrylamide in the samples prepared by Dr. Zyzak, and Ms. Batchelor determined the levels of asparagine and aspartic acid in

those samples. They reported their analytical test results back to Dr. Zyzak on August 5 and August 8, 2002, respectively, and Dr. Zyzak explained his experiment, the results and their significance to Dr. Lee on August 9, 2002.

Dr. Zyzak's experiment resulted in significant reductions in the acrylamide levels (by over 95%) and the asparagine levels (by over 85%) in the samples treated with asparaginase as compared to the untreated samples. As shown by Dr. Zyzak, (Zyzak declaration, ¶¶ 29-32) his experiment corresponds to both claim 1 and claim 10 of Applicants' application, which claims are two of three embodiments of Applicants' proposed count set forth in Section II.C., above.

Thus, an interference should be declared naming Applicants as the Junior party.

I. Applicants' New Claims 51-63 Comply With 35 U.S.C. § 135(b)(2)

Applicants have added new claims 51-63. New claims 51-63 were first presented in a Preliminary Amendment, filed on March 24, 2005, in U.S. Application No. 11/090,570, which is a continuation of this application. Claims 51-63 were presented to "copy" pending claims from the Elder '504 application.

The Elder '504 application published as U.S. 2004/0058054 A1 on March 25, 2004, and has a filing date of September 19, 2002, one day before Applicants' earliest filing date.

Applicants have complied with 35 U.S.C. § 135(b)(2) by presenting new claims 51-63 before one year after the March 25, 2004, publication of the Elder '504 application.

J. Applicants' New Claims 51-63 Are Supported By A Written Description (37 C.F.R. § 41.202(a)(5))

Appendix A is a claim chart showing that each of Applicants' new claims 51-63 is supported by a written description in Applicants' specification.

K. Constructive Reductions To Practice Of Applicants' Claims In Prior Provisional Applications (37 C.F.R. § 41.202(a)(6))

Applicants' application claims priority to U.S. Provisional Application No. 60/412,307, filed on September 20, 2002, or one day after Elder's filing date. In addition, Applicants claim priority to U.S. Provisional Application No. 60/421,432, filed October 25, 2005, and U.S. Provisional Application No. 60/431,147, filed December 5, 2002.

For purposes of the proposed interference, Applicants wish to be accorded the benefit of the following provisional applications: U.S. Provisional Application No. 60/412,307, filed September 20, 2002; U.S. Provisional Application No. 60/421,432, filed October 25, 2002; and U.S. Provisional Application No. 60/431,147, filed December 5, 2002.

Appendix B is a claim chart showing that the subject matter of Applicants' claims 1-63 was constructively reduced to practice on September 20, 2002, by Applicants' U.S. Provisional Application No. 60/412,307 ("the '307 application"), filed on September 20, 2002.

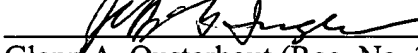
Appendix C is a claim chart showing that the subject matter of Applicants' claims 1-63 was constructively reduced to practice on October 25, 2002, by Applicants' U.S. Provisional Application No. 60/421,432 ("the '432 application"), filed on October 25, 2002.

Appendix D is a claim chart showing that the subject matter of Applicants' claims 1-63 was constructively reduced to practice on December 5, 2002 by Applicants' U.S. Provisional Application No. 60/431,147 ("the '147 application"), filed on December 5, 2002.

III. CONCLUSION

Applicants have shown that an interference should be declared based on Applicants' proposed Count 1 and involving Applicants' claims 1-63 and pending and allowed claims 1-8 and 11-15 of the Elder '504 application. An early declaration of interference between this application and the Elder '504 application is earnestly requested.

Respectfully submitted,



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APPENDIX A TO SUGGESTION OF INTERFERENCE

SUPPORT IN APPLICANTS' SPECIFICATION FOR NEW CLAIMS 51-63

APPLICANTS' NEW CLAIMS 51–63	SUPPORT IN APPLICANTS' SPECIFICATION
Claim 51 (new): A method for the reduction of acrylamide in thermally processed foods comprising the steps of:	Applicants' application is directed to a method for reducing acrylamide in food products, including in particular, thermally processed foods. See for example, the Title and Field of Invention on page 1; the Summary of Invention on page 2, first three paragraphs; page 3, second full paragraph; and pages 3-15 and 29-31.
(a) providing a food material that contains free asparagine;	Applicants' application is directed to a method for reducing the level of asparagine in food materials, and thus, necessarily discloses food materials containing free asparagine. See for example, page 2, Summary of Invention, first and second paragraphs; pages 2-3, Detailed Description of Invention, first paragraph; page 3, second full paragraph; pages 3-4, "A. Method for Reduction of Acrylamide in Food Products," paragraph bridging pages 3-4; page 4, first and second full paragraphs. Applicants define "food material" as including, but not limited to, "any edible material used in the preparation of food, including mixtures of two or more foods," and as including "any type of asparagine-containing food, food product, food ingredient, or mixtures thereof." Page 4, fifth full paragraph.

APPLICANTS' NEW CLAIMS 51–63	SUPPORT IN APPLICANTS' SPECIFICATION
(b) adding an asparaginase solution to the food material, thereby inactivating asparagine in the asparagine-containing food material;	Applicants disclose that asparaginase may be added to the food material in any suitable form, including in the form of a solution. See for example, page 4, last paragraph; page 5, fourth full paragraph; page 12, text after item (7); pages 29-30, sentence bridging pages 29-30; and page 30, last paragraph.
(c) using said food material as a component in a food mixture; and	The treated food material may be used as a part of a food mixture or as a mixture of food materials. See for example, page 4, fifth full paragraph.
(d) heating said food mixture to form a thermally processed food product.	The food material is heated or cooked to form a finished food product. See for example, page 3, second and third full paragraphs; page 6, section "5. Heating The Food Material To Form The Finished Food Product," and pages 7-15 and 29-31.
Claim 52 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises primarily a carbohydrate.	Applicants disclose many carbohydrate-containing foods. See for example, page 1, Background of the Invention, first paragraph; page 7, third paragraph; and pages 7-8.
Claim 53 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material is selected from the group comprising rice, wheat, corn, potato and oats.	Applicants disclose many food materials including rice (page 8, second line); wheat (page 7, last paragraph, fourth line), corn (page 7, last paragraph, lines seven to nine, and page 14, section "5. Tortilla Chips"), potato (page 7, last paragraph, fourth line; pages 7-14 and 29-31) and oats (page 7, last paragraph, fourth line).
Claim 54 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises potato.	Applicants disclose food materials that comprise potato. See for example, page 7, last paragraph, fourth line, pages 7-14 and 29-31.

APPLICANTS' NEW CLAIMS 51–63	SUPPORT IN APPLICANTS' SPECIFICATION
Claim 55 (new) The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the asparagine-containing food material further comprises at least one other amino acid.	Applicants disclose many asparagine-containing food materials that are well-known to comprise at least one other amino acid. It is well-known in the art that many of the disclosed food materials at pages 7-8 contain amino acids other than asparagine.
Claim 56 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 55 wherein the at least one other amino acid is lysine.	Applicants disclose many asparagine-containing food materials that are well-known to include the amino acid lysine. It is well-known in the art that many of the disclosed food materials at pages 7-8 contain the amino acid lysine.
Claim 57 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the inactivating step (b) comprises adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar.	Applicants disclose adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar. See for example, page 3, second line; and page 9, first full paragraph. It is well-known in the art that many of the disclosed food materials at pages 7-8 contain simple sugars.
Claim 58 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 57 wherein the simple sugar comprises glucose.	Applicants disclose adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar that comprises glucose. See claim 57. It is well-known in the art that many of the disclosed food materials at pages 7-8 contain the simple sugar glucose.
Claim 59 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food mixture is heated at step (d) to a temperature of at least about 121°C.	See page 10, last three lines to page 11, line 1.
Claim 60 (new): The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the thermal processing of the food mixture of step (d) occurs at temperatures between about 121°C and about 191°C.	See page 10, last three lines to page 11, line 1; page 30, fifth line (375°F = 191°C); and page 31, third line (375°F = 191°C).

APPLICANTS' NEW CLAIMS 51–63	SUPPORT IN APPLICANTS' SPECIFICATION
Claim 61 (new): A food produced by the method of Claim 51.	Applicants disclose many foods produced by the method of claim 51. See for example, pages 7-15 and 29-31.
Claim 62 (new): The food of Claim 61 wherein said food comprises potato.	Applicants disclose several foods comprising potato produced by the method of claim 51. See for example, pages 7-15 and 29-31.
Claim 63 (new): The food of Claim 62 wherein said food comprises potato chips.	Applicants disclose potato chips produced by the method of claim 51. See for example section "3. Potato Chips" at pages 12-13; and Example 2, pages 29-30.

APPENDIX B TO SUGGESTION OF INTERFERENCE

SUPPORT IN APPLICANTS' PROVISIONAL APPLICATION NO. 60/412,307, FILED SEPTEMBER 20, 2002 FOR CLAIMS 1-63

APPLICANTS' CLAIMS 1-63	SUPPORT IN APPLICANTS' PROVISIONAL APPLICATION NO. 60/412,307, FILED SEPTEMBER 20, 2002
Claim 1. A method for reducing the level of asparagine in a food material, comprising adding an asparagine-reducing enzyme to the food material before heating.	Applicants' application is directed to a method for reducing the level of asparagine in food materials. See for example, page 2, Summary of Invention, first and second paragraphs; pages 2-3, Detailed Description of Invention, first paragraph; pages 2-3, third full paragraph; page 3, "A. Method for Reduction of Acrylamide in Food Products," first, second, and third paragraphs. Page 4, third full paragraph states that "'food material' includes any type of asparagine-containing food, food product, food ingredient, or mixtures thereof. The food material can be in any suitable form, including raw or pretreated." The paragraph bridging pages 6-7 contains an extensive list of suitable food products.
Claim 2. The method of claim 1, wherein said asparagine-reducing enzyme is asparaginase.	Applicants disclose asparaginase at page 2, description of Figure 2; page 3, second full paragraph; page 3, "A. Method for Reduction of Acrylamide in Food Products," first and second paragraphs and elsewhere.
Claim 3. The method of claim 1, wherein the level of asparagine is reduced by at least about 10%.	Reducing the level at asparagine by at least about 10% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 4. The method of claim 1, wherein said asparagine-reducing enzyme is an enzyme capable of hydrolyzing the amide group of free asparagine.	Applicants disclose hydrolyzing the amide group of free asparagine at page 3, first and second full paragraphs; and page 4, "1. Adding an asparagine-reducing enzyme to a food material, wherein said food material

	comprises asparagine," first paragraph.
Claim 5. A method for reducing the level of asparagine in a food material, comprising:	Applicants disclose the method of this claim at page 3, "A. Method for Reduction of Acrylamide in Food Products," third paragraph, steps 1-4.
(1) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;	See above, step 1.
(2) optionally mixing the enzyme with the food material;	See above, step 2.
(3) allowing a sufficient time for the enzyme to react with the asparagine; and	See above, step 3.
(4) optionally deactivating or optionally removing the enzyme.	See above, step 4.
Claim 6. The method of reducing the level of acrylamide in Claim 5 in a food material, comprising reducing the level of asparagine in the food material before heating.	Applicants disclose "that acrylamide formation in heated foods can be reduced by removing the asparagine or converting the asparagine in the food to another substance before cooking," in the paragraph bridging pages 2-3.
Claim 7. The method of claim 6, wherein reducing the level of asparagine in the food product comprises adding an asparagine-reducing enzyme to the food material.	Applicants disclose adding an asparagine-reducing enzyme at page 3, second and third full paragraphs, and at pages 4-5, "1. Adding an asparagine reducing enzyme to a food material, wherein said food material comprises asparagine."
Claim 8. The method of claim 7, wherein said asparagine-reducing enzyme is asparaginase.	Applicants disclose asparaginase at page 2, description of Figure 2; page 3, second full paragraph; page 3, "A. Method for Reduction of Acrylamide in Food Products," first and second paragraphs and elsewhere.
Claim 9. The method of claim 7, wherein said asparagine-reducing enzyme is an enzyme capable of hydrolyzing the amide group of free asparagine.	Applicants disclose hydrolyzing the amide group of free asparagine at page 3, first and second full paragraphs; and page 4, "1. Adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine," first paragraph..
Claim 10. A method for reducing the level	Applicants disclose the method of this

of acrylamide in food, comprising:	claim at page 3, "A. Method for Reduction of Acrylamide in Food Products," third paragraph, steps 1-5.
(1) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;	See above, step 1.
(2) optionally mixing the enzyme with the food material;	See above, step 2.
(3) allowing a sufficient time for the enzyme to react with the asparagine;	See above, step 3.
(4) optionally deactivating or optionally removing the enzyme; and	See above, step 4.
(5) heating the food material to form the finished food product.	See above, step 5.
Claim 11. A food material, wherein the level of asparagine in said food material is reduced by at least about 10% from the level in the food material in a previous condition.	Reducing the level at asparagine by at least about 10% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 12. The food material of claim 11, wherein the level of asparagine in said food material is reduced by at least about 30%.	Reducing the level at asparagine by at least about 30% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to React with the Asparagine," first paragraph.
Claim 13. The food material of claim 12, wherein the level of asparagine in said food material is reduced by at least about 50%.	Reducing the level at asparagine by at least about 50% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 14. The food material of claim 13, wherein the level of asparagine in said food material is reduced by at least about 70%.	Reducing the level at asparagine by at least about 70% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 15. The food material of claim 14, wherein the level of asparagine in said food material is reduced by at least about 90%.	Reducing the level at asparagine by at least about 90% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 16. A food product comprising a	Reducing the level at asparagine by at least

food material, wherein the level of asparagine in said food material is reduced by at least about 10% from the level in the food material in a previous condition.	about 10% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 17. The food product of claim 16, wherein the level of asparagine in said food material is reduced by at least about 30%.	Reducing the level at asparagine by at least about 30% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 18. The food product of claim 17, wherein the level of asparagine in said food material is reduced by at least about 50%.	Reducing the level at asparagine by at least about 50% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 19. The food product of claim 18, wherein the level of asparagine in said food material is reduced by at least about 70%.	Reducing the level at asparagine by at least about 70% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 20. The food product of claim 19, wherein the level of asparagine in said food material is reduced by at least about 90%.	Reducing the level at asparagine by at least about 90% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 21. The food product of claim 16, wherein said food product is selected from the group consisting of potato crisps, potato chips, tortilla chips, and corn chips.	Applicants disclose food products having reduced levels of acrylamide, including potato crisps, potato chips, tortilla chips, and corn chips, at page 6, "C. Food Products Having Reduced Levels of Acrylamide," second through fifth paragraphs.
Claim 22. A food material, wherein the level of acrylamide in said food material is reduced by at least about 10% from the level in the food material in a previous condition.	Reducing the level of acrylamide by at least about 10% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 23. The food material of claim 22, wherein the level of acrylamide in said food material is reduced by at least about 30%.	Reducing the level of acrylamide by at least about 30% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 24. The food material of claim 23, wherein the level of acrylamide in said food material is reduced by at least about	Reducing the level of acrylamide by at least about 50% from the previous level is disclosed at page 6, "5. Heating the food

50%.	material to form the finished food product," third paragraph.
Claim 25. The food material of claim 24, wherein the level of acrylamide in said food material is reduced by at least about 70%.	Reducing the level of acrylamide by at least about 70% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 26. The food material of claim 25, wherein the level of acrylamide in said food material is reduced by at least about 90%.	Reducing the level of acrylamide by at least about 90% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 27. A food product comprising a food material, wherein the level of acrylamide in said food material is reduced by at least about 10% from the level in the food material in a previous condition.	Reducing the level of acrylamide by at least about 10% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 28. The food product of claim 27, wherein the level of acrylamide in said food material is reduced by at least about 30%.	Reducing the level of acrylamide by at least about 30% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 29. The food product of claim 28, wherein the level of acrylamide in said food material is reduced by at least about 50%.	Reducing the level of acrylamide by at least about 50% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 30. The food product of claim 29, wherein the level of acrylamide in said food material is reduced by at least about 70%.	Reducing the level of acrylamide by at least about 70% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 31. The food product of claim 30, wherein the level of acrylamide in said food material is reduced by at least about 90%.	Reducing the level of acrylamide by at least about 90% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 32. The food product of claim 27, wherein said food product is selected from the group consisting of potato crisps, potato chips, tortilla chips, and corn chips.	Applicants disclose food products having reduced levels of acrylamide, including potato crisps, potato chips, tortilla chips, and corn chips, at page 6, "C. Food Products Having Reduced Levels of Acrylamide," second through fifth paragraphs.
Claim 33. Fabricated potato crisps	Fabricated potato crisps having less than

comprising less than about 400 ppb acrylamide.	about 400 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," third paragraph.
Claim 34. The fabricated potato crisps of claim 33, comprising less than about 300 ppb acrylamide.	Fabricated potato crisps having less than about 300 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," third paragraph.
Claim 35. The fabricated potato crisps of claim 34, comprising less than about 200 ppb acrylamide.	Fabricated potato crisps having less than about 200 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," third paragraph.
Claim 36. The fabricated potato crisps of claim 35, comprising less than about 50 ppb acrylamide.	Fabricated potato crisps having less than about 50 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," third paragraph.
Claim 37. The fabricated potato crisps of claim 36, comprising less than about 10 ppb acrylamide.	Fabricated potato crisps having less than about 10 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," third paragraph.
Claim 38. Potato chips comprising less than about 100 ppb acrylamide.	Potato chips comprising less than about 100 ppb acrylamide are disclosed at page 30, "Potato chips," Item 1.
Claim 39. The potato chips of claim 38, comprising less than about 30 ppb acrylamide.	Potato chips comprising less than about 30 ppb acrylamide are disclosed at page 30, "Potato chips," Item 2.
Claim 40. The potato chips of claim 39, comprising less than about 10 ppb acrylamide.	Potato chips comprising less than about 20 ppb acrylamide are disclosed at page 30, "Potato chips," Item 3.
Claim 41. The potato chips of claim 40, comprising less than about 5 ppb acrylamide.	Potato chips comprising less than about 10 ppb acrylamide are disclosed at page 30, "Potato chips," Item 4.
Claim 42. Tortilla chips comprising less than about 100 ppb acrylamide.	Tortilla chips having less than about 100 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," fifth paragraph.
Claim 43. The tortilla chips of claim 42, comprising less than about 50 ppb acrylamide.	Tortilla chips having less than about 50 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," fifth paragraph.
Claim 44. The tortilla chips of claim 43, comprising less than about 10 ppb acrylamide.	Tortilla chips having less than about 10 ppb are disclosed at p. 6, "C. Food Products Having Reduced Levels of Acrylamide," fifth paragraph.

Claim 45. An article of commerce comprising:	This article of commerce is disclosed at page 14, under "D. Article of Commerce," and at pages 30-31, Item 1.
(a) a food product, wherein said food product has a reduced level of acrylamide compared to the level in the food product in a previous condition;	See above.
(b) a container for containing the food product; and	See above.
(c) a message associated with the container;	See above.
wherein said message associated with the container informs the consumer that the food product contains a reduced level of acrylamide.	See above.
Claim 46. The article of claim 45, wherein said message informs the consumer that the food product is low in acrylamide.	This article of commerce is disclosed at page 14, under "D. Article of Commerce."
Claim 47. An article of commerce comprising:	This article of commerce is disclosed at pages 14-15, under "D. Article Commerce" and at page 32, Item 3. See especially page 15, third full paragraph, concerning a reduced level of asparagine.
(a) a food product, wherein said food product has a reduced level of asparagine compared to the level in the food product in a previous condition;	See above.
(b) a container for containing the food product; and	See above.
(c) a message associated with the container;	See above.
wherein said message associated with the container informs the consumer that the food product contains a reduced level of asparagine.	See above.
Claim 48. The article of claim 47, wherein said message informs the consumer that the	See claim 47; page 28, Example 10 and page 31, Item 4.

food product is low in asparagine.	
Claim 49. The article of claim 45, wherein said food product is a food ingredient.	This article is disclosed at page 31, Item 5.
Claim 50. The article of claim 47, wherein said food product is a food ingredient.	This article is disclosed at page 31, Item 6.
Claim 51. A method for the reduction of acrylamide in thermally processed foods comprising the steps of:	Applicants' application is directed to a method for reducing acrylamide in food products, including in particular, thermally processed foods. See for example, page 2, Summary of Invention, first and second paragraphs; pages 2-3, Detailed Description of Invention, first paragraph; pages 2-3, third full paragraph; page 3, "A. Method for Reduction of Acrylamide in Food Products," first, second, and third paragraphs.
(a) providing a food material that contains free asparagine;	Applicants' application is directed to a method for reducing the level of asparagine in food materials, and thus, necessarily discloses food materials containing free asparagine. See for example, page 2, Summary of Invention, first and second paragraphs; page 2, Detailed Description of Invention, first paragraph and paragraph bridging pages 2-3; page 3, "A. Method for Reduction of Acrylamide in Food Products," first through third paragraphs. Page 4, third full paragraph states that "'food material' includes any type of asparagine-containing food, food product, food ingredient, or mixtures thereof. The food material can be in any suitable form, including raw or pretreated." The paragraph bridging pages 6-7 contains an extensive list of suitable food products.
(b) adding an asparaginase solution to the food material, thereby inactivating asparagine in the asparagine-containing food material;	Applicants disclose that asparaginase may be added to the food material in any suitable form, including in the form of a solution. See for example, page 4, fourth paragraph; page 11, text after item (7);

	page 25, last paragraph; and page 26, last paragraph.
(c) using said food material as a component in a food mixture; and	The treated food material may be used as a part of a food mixture or as a mixture of food materials. See for example, page 4, sixth paragraph.
(d) heating said food mixture to form a thermally processed food product.	The food material is heated or cooked to form a finished food product. See for example, pages 2-3, Detailed Description of the Invention, second and third paragraphs; page 6, "5. Heating The Food Material To Form The Finished Food Product," and pages 6-14 and 25-28.
Claim 52. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises primarily a carbohydrate.	Applicants disclose many carbohydrate-containing foods. See for example, page 1, Background of the Invention, first paragraph; and pages 6-7, "C. Food Products Having Reduced Levels of Acrylamide."
Claim 53. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material is selected from the group comprising rice, wheat, corn, potato and oats.	Applicants disclose many food materials including rice (page 7, 14th line); wheat (page 7, second line), corn (page 7, 14th line, and page 13, "5. Tortilla Chips"), potato (page 7, second line; pages 7-13 and 25-28) and oats (page 7, second line).
Claim 54. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises potato.	Applicants disclose food materials that comprise potato. See for example, page 7, second line; pages 7-13 and 25-28.
Claim 55. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the asparagine-containing food material further comprises at least one other amino acid.	Applicants disclose many asparagine-containing food materials that are well-known to comprise at least one other amino acid. It is well-known in the art that many of the disclosed food materials at pages 6-7 contain amino acids other than asparagine.
Claim 56. The method of reducing acrylamide formation in thermally processed foods of Claim 55 wherein the at least one other amino acid is lysine.	Applicants disclose many asparagine-containing food materials that are well-known to include the amino acid lysine. It is well-known in the art that many of the disclosed food materials at pages 6-7

	contain the amino acid lysine.
Claim 57. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the inactivating step (b) comprises adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar.	Applicants disclose adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar. See for example, page 2, "Detailed Description of Information, first paragraph, fourth line; and page 8, third full paragraph. It is well-known in the art that many of the disclosed food materials at pages 6-7 contain simple sugars.
Claim 58. The method of reducing acrylamide formation in thermally processed foods of Claim 57 wherein the simple sugar comprises glucose.	Applicants disclose adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar that comprises glucose. See claim 57. It is well-known in the art that many of the disclosed food materials at pages 6-7 contain the simple sugar glucose.
Claim 59. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food mixture is heated at step (d) to a temperature of at least about 121°C.	See page 10, lines 5-7.
Claim 60. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the thermal processing of the food mixture of step (d) occurs at temperatures between about 121°C and about 191°C.	See page 10, lines 5-7; page 26, third line (375°F = 191°C); and page 26, last line (375°F = 191°C).
Claim 61. A food produced by the method of Claim 51.	Applicants disclose many foods produced by the method of claim 51. See for example, pages 7-13 and 25-28.
Claim 62. The food of Claim 61 wherein said food comprises potato.	Applicants disclose several foods comprising potato produced by the method of claim 51. See for example, pages 7-13 and 25-28.
Claim 63. The food of Claim 62 wherein said food comprises potato chips.	Applicants disclose potato chips produced by the method of claim 51. See for example "3. Potato Chips" at pages 11-12; and Example 2, pages 25-26.

APPENDIX C TO SUGGESTION OF INTERFERENCE

SUPPORT IN APPLICANTS' PROVISIONAL APPLICATION NO. 60/421,432, FILED OCTOBER 25, 2002 FOR CLAIMS 1-63

APPLICANTS' CLAIMS 1-63	SUPPORT IN APPLICANTS' PROVISIONAL APPLICATION NO. 60/421,432, FILED OCTOBER 25, 2002
Claim 1. A method for reducing the level of asparagine in a food material, comprising adding an asparagine-reducing enzyme to the food material before heating.	Applicants' application is directed to a method for reducing the level of asparagine in food materials. See for example, page 2, Summary of Invention, first and second paragraphs; pages 2-3, Detailed Description of Invention, first paragraph; pages 2-3, third full paragraph; page 3, "A. Method for Reduction of Acrylamide in Food Products," first, second, and third paragraphs. Page 4, third full paragraph states that "'food material' includes any type of asparagine-containing food, food product, food ingredient, or mixtures thereof. The food material can be in any suitable form, including raw or pretreated." The paragraph bridging pages 6-7 contains an extensive list of suitable food products.
Claim 2. The method of claim 1, wherein said asparagine-reducing enzyme is asparaginase.	Applicants disclose asparaginase at page 2, description of Figure 2; page 3, second full paragraph; page 3, "A. Method for Reduction of Acrylamide in Food Products," first and second paragraphs and elsewhere.
Claim 3. The method of claim 1, wherein the level of asparagine is reduced by at least about 10%.	Reducing the level at asparagine by at least about 10% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 4. The method of claim 1, wherein said asparagine-reducing enzyme is an enzyme capable of hydrolyzing the amide group of free asparagine.	Applicants disclose hydrolyzing the amide group of free asparagine at page 3, first and second full paragraphs; and page 4, "1. Adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine," first paragraph.

Claim 5. A method for reducing the level of asparagine in a food material, comprising:	Applicants disclose the method of this claim at page 3, "A. Method for Reduction of Acrylamide in Food Products," third paragraph, steps 1-4.
(1) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;	See above, step 1.
(2) optionally mixing the enzyme with the food material;	See above, step 2.
(3) allowing a sufficient time for the enzyme to react with the asparagine; and	See above, step 3.
(4) optionally deactivating or optionally removing the enzyme.	See above, step 4.
Claim 6. The method of reducing the level of acrylamide in Claim 5 in a food material, comprising reducing the level of asparagine in the food material before heating.	Applicants disclose "that acrylamide formation in heated foods can be reduced by removing the asparagine or converting the asparagine in the food to another substance before cooking," in the paragraph bridging pages 2-3.
Claim 7. The method of claim 6, wherein reducing the level of asparagine in the food product comprises adding an asparagine-reducing enzyme to the food material.	Applicants disclose adding an asparagine-reducing enzyme at page 3, second and third full paragraphs, and at pages 4-5, "1. Adding an asparagine reducing enzyme to a food material, wherein said food material comprises asparagine."
Claim 8. The method of claim 7, wherein said asparagine-reducing enzyme is asparaginase.	Applicants disclose asparaginase at page 2, description of Figure 2; page 3, second full paragraph; page 3, "A. Method for Reduction of Acrylamide in Food Products," first and second paragraphs and elsewhere.
Claim 9. The method of claim 7, wherein said asparagine-reducing enzyme is an enzyme capable of hydrolyzing the amide group of free asparagine.	Applicants disclose hydrolyzing the amide group of free asparagine at page 3, first and second full paragraphs; and page 4, "1. Adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine," first paragraph..
Claim 10. A method for reducing the level of acrylamide in food, comprising:	Applicants disclose the method of this claim at page 3, "A. Method for Reduction of Acrylamide in Food Products," third

	paragraph, steps 1-5.
(1) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;	See above, step 1.
(2) optionally mixing the enzyme with the food material;	See above, step 2.
(3) allowing a sufficient time for the enzyme to react with the asparagine;	See above, step 3.
(4) optionally deactivating or optionally removing the enzyme; and	See above, step 4.
(5) heating the food material to form the finished food product.	See above, step 5.
Claim 11. A food material, wherein the level of asparagine in said food material is reduced by at least about 10% from the level in the food material in a previous condition.	Reducing the level at asparagine by at least about 10% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 12. The food material of claim 11, wherein the level of asparagine in said food material is reduced by at least about 30%.	Reducing the level at asparagine by at least about 30% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to React with the Asparagine," first paragraph.
Claim 13. The food material of claim 12, wherein the level of asparagine in said food material is reduced by at least about 50%.	Reducing the level at asparagine by at least about 50% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 14. The food material of claim 13, wherein the level of asparagine in said food material is reduced by at least about 70%.	Reducing the level at asparagine by at least about 70% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 15. The food material of claim 14, wherein the level of asparagine in said food material is reduced by at least about 90%.	Reducing the level at asparagine by at least about 90% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 16. A food product comprising a food material, wherein the level of asparagine in said food material is reduced	Reducing the level at asparagine by at least about 10% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme

by at least about 10% from the level in the food material in a previous condition.	to react with the asparagine," first paragraph.
Claim 17. The food product of claim 16, wherein the level of asparagine in said food material is reduced by at least about 30%.	Reducing the level at asparagine by at least about 30% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 18. The food product of claim 17, wherein the level of asparagine in said food material is reduced by at least about 50%.	Reducing the level at asparagine by at least about 50% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 19. The food product of claim 18, wherein the level of asparagine in said food material is reduced by at least about 70%.	Reducing the level at asparagine by at least about 70% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 20. The food product of claim 19, wherein the level of asparagine in said food material is reduced by at least about 90%.	Reducing the level at asparagine by at least about 90% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 21. The food product of claim 16, wherein said food product is selected from the group consisting of potato crisps, potato chips, tortilla chips, and corn chips.	Applicants disclose food products having reduced levels of acrylamide, including potato crisps, potato chips, tortilla chips, and corn chips, at page 6, "C. Food Products Having Reduced Levels of Acrylamide," second through fifth paragraphs.
Claim 22. A food material, wherein the level of acrylamide in said food material is reduced by at least about 10% from the level in the food material in a previous condition.	Reducing the level of acrylamide by at least about 10% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 23. The food material of claim 22, wherein the level of acrylamide in said food material is reduced by at least about 30%.	Reducing the level of acrylamide by at least about 30% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 24. The food material of claim 23, wherein the level of acrylamide in said food material is reduced by at least about 50%.	Reducing the level of acrylamide by at least about 50% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.

Claim 25. The food material of claim 24, wherein the level of acrylamide in said food material is reduced by at least about 70%.	Reducing the level of acrylamide by at least about 70% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 26. The food material of claim 25, wherein the level of acrylamide in said food material is reduced by at least about 90%.	Reducing the level of acrylamide by at least about 90% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 27. A food product comprising a food material, wherein the level of acrylamide in said food material is reduced by at least about 10% from the level in the food material in a previous condition.	Reducing the level of acrylamide by at least about 10% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 28. The food product of claim 27, wherein the level of acrylamide in said food material is reduced by at least about 30%.	Reducing the level of acrylamide by at least about 30% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 29. The food product of claim 28, wherein the level of acrylamide in said food material is reduced by at least about 50%.	Reducing the level of acrylamide by at least about 50% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 30. The food product of claim 29, wherein the level of acrylamide in said food material is reduced by at least about 70%.	Reducing the level of acrylamide by at least about 70% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 31. The food product of claim 30, wherein the level of acrylamide in said food material is reduced by at least about 90%.	Reducing the level of acrylamide by at least about 90% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 32. The food product of claim 27, wherein said food product is selected from the group consisting of potato crisps, potato chips, tortilla chips, and corn chips.	Applicants disclose food products having reduced levels of acrylamide, including potato crisps, potato chips, tortilla chips, and corn chips, at page 6, "C. Food Products Having Reduced Levels of Acrylamide," second through fifth paragraphs.
Claim 33. Fabricated potato crisps comprising less than about 400 ppb acrylamide.	Fabricated potato crisps having less than about 400 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of

	Acrylamide," third paragraph.
Claim 34. The fabricated potato crisps of claim 33, comprising less than about 300 ppb acrylamide.	Fabricated potato crisps having less than about 300 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," third paragraph.
Claim 35. The fabricated potato crisps of claim 34, comprising less than about 200 ppb acrylamide.	Fabricated potato crisps having less than about 200 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," third paragraph.
Claim 36. The fabricated potato crisps of claim 35, comprising less than about 50 ppb acrylamide.	Fabricated potato crisps having less than about 50 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," third paragraph.
Claim 37. The fabricated potato crisps of claim 36, comprising less than about 10 ppb acrylamide.	Fabricated potato crisps having less than about 10 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," third paragraph.
Claim 38. Potato chips comprising less than about 100 ppb acrylamide.	Potato chips comprising less than about 100 ppb acrylamide are disclosed at page 30, "Potato chips," Item 1.
Claim 39. The potato chips of claim 38, comprising less than about 30 ppb acrylamide.	Potato chips comprising less than about 30 ppb acrylamide are disclosed at page 30, "Potato chips," Item 2.
Claim 40. The potato chips of claim 39, comprising less than about 10 ppb acrylamide.	Potato chips comprising less than about 20 ppb acrylamide are disclosed at page 30, "Potato chips," Item 3.
Claim 41. The potato chips of claim 40, comprising less than about 5 ppb acrylamide.	Potato chips comprising less than about 10 ppb acrylamide are disclosed at page 30, "Potato chips," Item 4.
Claim 42. Tortilla chips comprising less than about 100 ppb acrylamide.	Tortilla chips having less than about 100 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," fifth paragraph.
Claim 43. The tortilla chips of claim 42, comprising less than about 50 ppb acrylamide.	Tortilla chips having less than about 50 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," fifth paragraph.
Claim 44. The tortilla chips of claim 43, comprising less than about 10 ppb acrylamide.	Tortilla chips having less than about 10 ppb are disclosed at p. 6, "C. Food Products Having Reduced Levels of Acrylamide," fifth paragraph.
Claim 45. An article of commerce comprising:	This article of commerce is disclosed at page 14, under "D. Article of Commerce,"

	and at page 30, Item 1.
(a) a food product, wherein said food product has a reduced level of acrylamide compared to the level in the food product in a previous condition;	See above.
(b) a container for containing the food product; and	See above.
(c) a message associated with the container;	See above.
wherein said message associated with the container informs the consumer that the food product contains a reduced level of acrylamide.	See above.
Claim 46. The article of claim 45, wherein said message informs the consumer that the food product is low in acrylamide.	This article of commerce is disclosed at page 14, under "D. Article of Commerce."
Claim 47. An article of commerce comprising:	This article of commerce is disclosed at page 14, under "D. Article Commerce" and at page 32, Item 3. See especially page 14, section D, last paragraph, concerning a reduced level of asparagine.
(a) a food product, wherein said food product has a reduced level of asparagine compared to the level in the food product in a previous condition;	See above.
(b) a container for containing the food product; and	See above.
(c) a message associated with the container;	See above.
wherein said message associated with the container informs the consumer that the food product contains a reduced level of asparagine.	See above.
Claim 48. The article of claim 47, wherein said message informs the consumer that the food product is low in asparagine.	See claim 47; page 27, Example 10 and page 31, Item 4.

Claim 49. The article of claim 45, wherein said food product is a food ingredient.	This article is disclosed at page 31, Item 5.
Claim 50. The article of claim 47, wherein said food product is a food ingredient.	This article is disclosed at page 31, Item 6.
Claim 51. A method for the reduction of acrylamide in thermally processed foods comprising the steps of:	Applicants' application is directed to a method for reducing acrylamide in food products, including in particular, thermally processed foods. See for example, page 2, Summary of Invention, first and second paragraphs; pages 2-3, Detailed Description of Invention, first paragraph; pages 2-3, third full paragraph; page 3, "A. Method for Reduction of Acrylamide in Food Products," first, second, and third paragraphs.
(a) providing a food material that contains free asparagine;	Applicants' application is directed to a method for reducing the level of asparagine in food materials, and thus, necessarily discloses food materials containing free asparagine. See for example, page 2, Summary of Invention, first and second paragraphs; page 2, Detailed Description of Invention, first paragraph and paragraph bridging pages 2-3; page 3, "A. Method for Reduction of Acrylamide in Food Products," first through third paragraphs. Page 4, third full paragraph states that "'food material' includes any type of asparagine-containing food, food product, food ingredient, or mixtures thereof. The food material can be in any suitable form, including raw or pretreated." The paragraph bridging pages 6-7 contains an extensive list of suitable food products.
(b) adding an asparaginase solution to the food material, thereby inactivating asparagine in the asparagine-containing food material;	Applicants disclose that asparaginase may be added to the food material in any suitable form, including in the form of a solution. See for example, page 4, fourth paragraph; page 11, text after item (7); page 24, first paragraph of Example 2; and page 26, first paragraph of Example 3.

(c) using said food material as a component in a food mixture; and	The treated food material may be used as a part of a food mixture or as a mixture of food materials. See for example, page 4, sixth paragraph.
(d) heating said food mixture to form a thermally processed food product.	The food material is heated or cooked to form a finished food product. See for example, pages 2-3, Detailed Description of the Invention, second and third paragraphs; page 6, "5. Heating The Food Material To Form The Finished Food Product," and pages 6-14 and 25-28.
Claim 52. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises primarily a carbohydrate.	Applicants disclose many carbohydrate-containing foods. See for example, page 1, Background of the Invention, first paragraph; and pages 6-7, "C. Food Products Having Reduced Levels of Acrylamide."
Claim 53. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material is selected from the group comprising rice, wheat, corn, potato and oats.	Applicants disclose many food materials including rice (page 7, 14th line); wheat (page 7, second line), corn (page 7, 13th line, and page 13, "5. Tortilla Chips"), potato (page 7, second line; pages 7-13, 25-26, and 27) and oats (page 7, second line).
Claim 54. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises potato.	Applicants disclose food materials that comprise potato. See for example, page 7, second line; pages 7-13, 25-26, and 27.
Claim 55. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the asparagine-containing food material further comprises at least one other amino acid.	Applicants disclose many asparagine-containing food materials that are well-known to comprise at least one other amino acid. It is well-known in the art that many of the disclosed food materials at pages 6-7 contain amino acids other than asparagine.
Claim 56. The method of reducing acrylamide formation in thermally processed foods of Claim 55 wherein the at least one other amino acid is lysine.	Applicants disclose many asparagine-containing food materials that are well-known to include the amino acid lysine. It is well-known in the art that many of the disclosed food materials at pages 6-7 contain the amino acid lysine.
Claim 57. The method of reducing	Applicants disclose adding an asparaginase

acrylamide formation in thermally processed foods of Claim 51 wherein the inactivating step (b) comprises adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar.	solution to the asparagine-containing food material in the presence of a simple sugar. See for example, page 2, "Detailed Description of Information, first paragraph, fourth line; and page 8, third full paragraph. It is well-known in the art that many of the disclosed food materials at pages 6-7 contain simple sugars.
Claim 58. The method of reducing acrylamide formation in thermally processed foods of Claim 57 wherein the simple sugar comprises glucose.	Applicants disclose adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar that comprises glucose. See claim 57. It is well-known in the art that many of the disclosed food materials at pages 6-7 contain the simple sugar glucose.
Claim 59. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food mixture is heated at step (d) to a temperature of at least about 121°C.	See page 10, lines 5-7.
Claim 60. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the thermal processing of the food mixture of step (d) occurs at temperatures between about 121°C and about 191°C.	See page 10, lines 5-7; page 24, Example 2, eighth line (375°F = 191°C); and page 5, Example 3, eighth line (375°F = 191°C).
Claim 61. A food produced by the method of Claim 51.	Applicants disclose many foods produced by the method of claim 51. See for example, pages 7-13 and 25-27.
Claim 62. The food of Claim 61 wherein said food comprises potato.	Applicants disclose several foods comprising potato produced by the method of claim 51. See for example, pages 7-13, 25-26, and 27.
Claim 63. The food of Claim 62 wherein said food comprises potato chips.	Applicants disclose potato chips produced by the method of claim 51. See for example "3. Potato Chips" at pages 11-12; and Example 2, pages 24-25.

APPENDIX D TO SUGGESTION OF INTERFERENCE

SUPPORT IN APPLICANTS' PROVISIONAL APPLICATION NO. 60/431,147, FILED DECEMBER 5, 2002 FOR CLAIMS 1-63

APPLICANTS' CLAIMS 1-63	SUPPORT IN APPLICANTS' PROVISIONAL APPLICATION NO. 60/431,147, FILED DECEMBER 5, 2002
Claim 1. A method for reducing the level of asparagine in a food material, comprising adding an asparagine-reducing enzyme to the food material before heating.	Applicants' application is directed to a method for reducing the level of asparagine in food materials. See for example, page 2, Summary of Invention, first and second paragraphs; pages 2-3, Detailed Description of Invention, first paragraph; pages 2-3, third full paragraph; page 3, "A. Method for Reduction of Acrylamide in Food Products," first, second, and third paragraphs. Page 4, third full paragraph states that "'food material' includes any type of asparagine-containing food, food product, food ingredient, or mixtures thereof. The food material can be in any suitable form, including raw or pretreated." The paragraph bridging pages 6-7 contains an extensive list of suitable food products.
Claim 2. The method of claim 1, wherein said asparagine-reducing enzyme is asparaginase.	Applicants disclose asparaginase at page 2, description of Figure 2; page 3, second full paragraph; page 3, "A. Method for Reduction of Acrylamide in Food Products," first and second paragraphs and elsewhere.
Claim 3. The method of claim 1, wherein the level of asparagine is reduced by at least about 10%.	Reducing the level at asparagine by at least about 10% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 4. The method of claim 1, wherein said asparagine-reducing enzyme is an enzyme capable of hydrolyzing the amide group of free asparagine.	Applicants disclose hydrolyzing the amide group of free asparagine at page 3, first and second full paragraphs; and page 4, "1. Adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine," first paragraph.

Claim 5. A method for reducing the level of asparagine in a food material, comprising:	Applicants disclose the method of this claim at page 3, "A. Method for Reduction of Acrylamide in Food Products," third paragraph, steps 1-4.
(1) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;	See above, step 1.
(2) optionally mixing the enzyme with the food material;	See above, step 2.
(3) allowing a sufficient time for the enzyme to react with the asparagine; and	See above, step 3.
(4) optionally deactivating or optionally removing the enzyme.	See above, step 4.
Claim 6. The method of reducing the level of acrylamide in Claim 5 in a food material, comprising reducing the level of asparagine in the food material before heating.	Applicants disclose "that acrylamide formation in heated foods can be reduced by removing the asparagine or converting the asparagine in the food to another substance before cooking," in the paragraph bridging pages 2-3.
Claim 7. The method of claim 6, wherein reducing the level of asparagine in the food product comprises adding an asparagine-reducing enzyme to the food material.	Applicants disclose adding an asparagine-reducing enzyme at page 3, second and third full paragraphs, and at pages 4-5, "1. Adding an asparagine reducing enzyme to a food material, wherein said food material comprises asparagine."
Claim 8. The method of claim 7, wherein said asparagine-reducing enzyme is asparaginase.	Applicants disclose asparaginase at page 2, description of Figure 2; page 3, second full paragraph; page 3, "A. Method for Reduction of Acrylamide in Food Products," first and second paragraphs and elsewhere.
Claim 9. The method of claim 7, wherein said asparagine-reducing enzyme is an enzyme capable of hydrolyzing the amide group of free asparagine.	Applicants disclose hydrolyzing the amide group of free asparagine at page 3, first and second full paragraphs; and page 4, "1. Adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine," first paragraph..
Claim 10. A method for reducing the level of acrylamide in food, comprising:	Applicants disclose the method of this claim at page 3, "A. Method for Reduction of Acrylamide in Food Products," third

	paragraph, steps 1-5.
(1) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;	See above, step 1.
(2) optionally mixing the enzyme with the food material;	See above, step 2.
(3) allowing a sufficient time for the enzyme to react with the asparagine;	See above, step 3.
(4) optionally deactivating or optionally removing the enzyme; and	See above, step 4.
(5) heating the food material to form the finished food product.	See above, step 5.
Claim 11. A food material, wherein the level of asparagine in said food material is reduced by at least about 10% from the level in the food material in a previous condition.	Reducing the level at asparagine by at least about 10% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 12. The food material of claim 11, wherein the level of asparagine in said food material is reduced by at least about 30%.	Reducing the level at asparagine by at least about 30% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to React with the Asparagine," first paragraph.
Claim 13. The food material of claim 12, wherein the level of asparagine in said food material is reduced by at least about 50%.	Reducing the level at asparagine by at least about 50% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 14. The food material of claim 13, wherein the level of asparagine in said food material is reduced by at least about 70%.	Reducing the level at asparagine by at least about 70% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 15. The food material of claim 14, wherein the level of asparagine in said food material is reduced by at least about 90%.	Reducing the level at asparagine by at least about 90% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 16. A food product comprising a food material, wherein the level of asparagine in said food material is reduced	Reducing the level at asparagine by at least about 10% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme

by at least about 10% from the level in the food material in a previous condition.	to react with the asparagine," first paragraph.
Claim 17. The food product of claim 16, wherein the level of asparagine in said food material is reduced by at least about 30%.	Reducing the level at asparagine by at least about 30% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 18. The food product of claim 17, wherein the level of asparagine in said food material is reduced by at least about 50%.	Reducing the level at asparagine by at least about 50% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 19. The food product of claim 18, wherein the level of asparagine in said food material is reduced by at least about 70%.	Reducing the level at asparagine by at least about 70% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 20. The food product of claim 19, wherein the level of asparagine in said food material is reduced by at least about 90%.	Reducing the level at asparagine by at least about 90% is disclosed at page 5, "3. Allowing a sufficient time for the enzyme to react with the asparagine," first paragraph.
Claim 21. The food product of claim 16, wherein said food product is selected from the group consisting of potato crisps, potato chips, tortilla chips, and corn chips.	Applicants disclose food products having reduced levels of acrylamide, including potato crisps, potato chips, tortilla chips, and corn chips, at page 6, "C. Food Products Having Reduced Levels of Acrylamide," second through fifth paragraphs.
Claim 22. A food material, wherein the level of acrylamide in said food material is reduced by at least about 10% from the level in the food material in a previous condition.	Reducing the level of acrylamide by at least about 10% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 23. The food material of claim 22, wherein the level of acrylamide in said food material is reduced by at least about 30%.	Reducing the level of acrylamide by at least about 30% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 24. The food material of claim 23, wherein the level of acrylamide in said food material is reduced by at least about 50%.	Reducing the level of acrylamide by at least about 50% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.

Claim 25. The food material of claim 24, wherein the level of acrylamide in said food material is reduced by at least about 70%.	Reducing the level of acrylamide by at least about 70% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 26. The food material of claim 25, wherein the level of acrylamide in said food material is reduced by at least about 90%.	Reducing the level of acrylamide by at least about 90% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 27. A food product comprising a food material, wherein the level of acrylamide in said food material is reduced by at least about 10% from the level in the food material in a previous condition.	Reducing the level of acrylamide by at least about 10% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 28. The food product of claim 27, wherein the level of acrylamide in said food material is reduced by at least about 30%.	Reducing the level of acrylamide by at least about 30% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 29. The food product of claim 28, wherein the level of acrylamide in said food material is reduced by at least about 50%.	Reducing the level of acrylamide by at least about 50% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 30. The food product of claim 29, wherein the level of acrylamide in said food material is reduced by at least about 70%.	Reducing the level of acrylamide by at least about 70% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 31. The food product of claim 30, wherein the level of acrylamide in said food material is reduced by at least about 90%.	Reducing the level of acrylamide by at least about 90% from the previous level is disclosed at page 6, "5. Heating the food material to form the finished food product," third paragraph.
Claim 32. The food product of claim 27, wherein said food product is selected from the group consisting of potato crisps, potato chips, tortilla chips, and corn chips.	Applicants disclose food products having reduced levels of acrylamide, including potato crisps, potato chips, tortilla chips, and corn chips, at page 6, "C. Food Products Having Reduced Levels of Acrylamide," second through fifth paragraphs.
Claim 33. Fabricated potato crisps comprising less than about 400 ppb acrylamide.	Fabricated potato crisps having less than about 400 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of

	Acrylamide," third paragraph.
Claim 34. The fabricated potato crisps of claim 33, comprising less than about 300 ppb acrylamide.	Fabricated potato crisps having less than about 300 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," third paragraph.
Claim 35. The fabricated potato crisps of claim 34, comprising less than about 200 ppb acrylamide.	Fabricated potato crisps having less than about 200 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," third paragraph.
Claim 36. The fabricated potato crisps of claim 35, comprising less than about 50 ppb acrylamide.	Fabricated potato crisps having less than about 50 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," third paragraph.
Claim 37. The fabricated potato crisps of claim 36, comprising less than about 10 ppb acrylamide.	Fabricated potato crisps having less than about 10 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," third paragraph.
Claim 38. Potato chips comprising less than about 100 ppb acrylamide.	Potato chips comprising less than about 100 ppb acrylamide are disclosed at page 30, "Potato chips," Item 1.
Claim 39. The potato chips of claim 38, comprising less than about 30 ppb acrylamide.	Potato chips comprising less than about 30 ppb acrylamide are disclosed at page 30, "Potato chips," Item 2.
Claim 40. The potato chips of claim 39, comprising less than about 10 ppb acrylamide.	Potato chips comprising less than about 20 ppb acrylamide are disclosed at page 30, "Potato chips," Item 3.
Claim 41. The potato chips of claim 40, comprising less than about 5 ppb acrylamide.	Potato chips comprising less than about 10 ppb acrylamide are disclosed at page 30, "Potato chips," Item 4.
Claim 42. Tortilla chips comprising less than about 100 ppb acrylamide.	Tortilla chips having less than about 100 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," fifth paragraph.
Claim 43. The tortilla chips of claim 42, comprising less than about 50 ppb acrylamide.	Tortilla chips having less than about 50 ppb are disclosed at page 6, "C. Food Products Having Reduced Levels of Acrylamide," fifth paragraph.
Claim 44. The tortilla chips of claim 43, comprising less than about 10 ppb acrylamide.	Tortilla chips having less than about 10 ppb are disclosed at p. 6, "C. Food Products Having Reduced Levels of Acrylamide," fifth paragraph.
Claim 45. An article of commerce comprising:	This article of commerce is disclosed at page 14, under "D. Article of Commerce,"

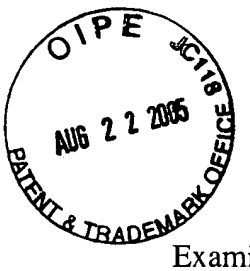
	and at page 34, Item 1.
(a) a food product, wherein said food product has a reduced level of acrylamide compared to the level in the food product in a previous condition;	See above.
(b) a container for containing the food product; and	See above.
(c) a message associated with the container;	See above.
wherein said message associated with the container informs the consumer that the food product contains a reduced level of acrylamide.	See above.
Claim 46. The article of claim 45, wherein said message informs the consumer that the food product is low in acrylamide.	This article of commerce is disclosed at page 14, under "D. Article of Commerce."
Claim 47. An article of commerce comprising:	This article of commerce is disclosed at page 14, under "D. Article Commerce" and at page 35, Item 3. See especially page 14, section D, last paragraph, concerning a reduced level of asparagine.
(a) a food product, wherein said food product has a reduced level of asparagine compared to the level in the food product in a previous condition;	See above.
(b) a container for containing the food product; and	See above.
(c) a message associated with the container;	See above.
wherein said message associated with the container informs the consumer that the food product contains a reduced level of asparagine.	See above.
Claim 48. The article of claim 47, wherein said message informs the consumer that the food product is low in asparagine.	See claim 47; page 30, Example 10 and page 35, Item 4.

Claim 49. The article of claim 45, wherein said food product is a food ingredient.	This article is disclosed at page 35, Item 5.
Claim 50. The article of claim 47, wherein said food product is a food ingredient.	This article is disclosed at page 35, Item 6.
Claim 51. A method for the reduction of acrylamide in thermally processed foods comprising the steps of:	Applicants' application is directed to a method for reducing acrylamide in food products, including in particular, thermally processed foods. See for example, page 2, Summary of Invention, first and second paragraphs; pages 2-3, Detailed Description of Invention, first paragraph; pages 2-3, third full paragraph; page 3, "A. Method for Reduction of Acrylamide in Food Products," first, second, and third paragraphs.
(a) providing a food material that contains free asparagine;	Applicants' application is directed to a method for reducing the level of asparagine in food materials, and thus, necessarily discloses food materials containing free asparagine. See for example, page 2, Summary of Invention, first and second paragraphs; page 2, Detailed Description of Invention, first paragraph and paragraph bridging pages 2-3; page 3, "A. Method for Reduction of Acrylamide in Food Products," first through third paragraphs. Page 4, third full paragraph states that "'food material' includes any type of asparagine-containing food, food product, food ingredient, or mixtures thereof. The food material can be in any suitable form, including raw or pretreated." The paragraph bridging pages 6-7 contains an extensive list of suitable food products.
(b) adding an asparaginase solution to the food material, thereby inactivating asparagine in the asparagine-containing food material;	Applicants disclose that asparaginase may be added to the food material in any suitable form, including in the form of a solution. See for example, page 4, fourth paragraph; page 11, text after item (7); page 28, first paragraph of Example 2; and page 29, first paragraph of Example 3.

(c) using said food material as a component in a food mixture; and	The treated food material may be used as a part of a food mixture or as a mixture of food materials. See for example, page 4, sixth paragraph.
(d) heating said food mixture to form a thermally processed food product.	The food material is heated or cooked to form a finished food product. See for example, pages 2-3, Detailed Description of the Invention, second and third paragraphs; page 6, "5. Heating The Food Material To Form The Finished Food Product," and pages 6-14 and 25-28.
Claim 52. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises primarily a carbohydrate.	Applicants disclose many carbohydrate-containing foods. See for example, page 1, Background of the Invention, first paragraph; and pages 6-7, "C. Food Products Having Reduced Levels of Acrylamide."
Claim 53. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material is selected from the group comprising rice, wheat, corn, potato and oats.	Applicants disclose many food materials including rice (page 7, 14th line); wheat (page 7, second line), corn (page 7, 13th line, and page 13, "5. Tortilla Chips"), potato (page 7, second line; pages 7-13, 27-29 and 30-31) and oats (page 7, second line).
Claim 54. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food material comprises potato.	Applicants disclose food materials that comprise potato. See for example, page 7, second line; pages 7-13, 27-29 and 30-31.
Claim 55. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the asparagine-containing food material further comprises at least one other amino acid.	Applicants disclose many asparagine-containing food materials that are well-known to comprise at least one other amino acid. It is well-known in the art that many of the disclosed food materials at pages 6-7 contain amino acids other than asparagine.
Claim 56. The method of reducing acrylamide formation in thermally processed foods of Claim 55 wherein the at least one other amino acid is lysine.	Applicants disclose many asparagine-containing food materials that are well-known to include the amino acid lysine. It is well-known in the art that many of the disclosed food materials at pages 6-7 contain the amino acid lysine.

Claim 57. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the inactivating step (b) comprises adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar.	Applicants disclose adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar. See for example, page 2, "Detailed Description of Information, first paragraph, fourth line; and page 8, third full paragraph. It is well-known in the art that many of the disclosed food materials at pages 6-7 contain simple sugars.
Claim 58. The method of reducing acrylamide formation in thermally processed foods of Claim 57 wherein the simple sugar comprises glucose.	Applicants disclose adding an asparaginase solution to the asparagine-containing food material in the presence of a simple sugar that comprises glucose. See claim 57. It is well-known in the art that many of the disclosed food materials at pages 6-7 contain the simple sugar glucose.
Claim 59. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the food mixture is heated at step (d) to a temperature of at least about 121°C.	See page 10, lines 5-7.
Claim 60. The method of reducing acrylamide formation in thermally processed foods of Claim 51 wherein the thermal processing of the food mixture of step (d) occurs at temperatures between about 121°C and about 191°C.	See page 10, lines 5-7; page 28, Example 2, eighth line (375°F = 191°C); and page 29, Example 3, eighth line (375°F = 191°C).
Claim 61. A food produced by the method of Claim 51.	Applicants disclose many foods produced by the method of claim 51. See for example, pages 7-13 and 27-31.
Claim 62. The food of Claim 61 wherein said food comprises potato.	Applicants disclose several foods comprising potato produced by the method of claim 51. See for example, pages 7-13, 27-29 and 30-31.
Claim 63. The food of Claim 62 wherein said food comprises potato chips.	Applicants disclose potato chips produced by the method of claim 51. See for example "3. Potato Chips" at pages 11-12; and Example 2, pages 28-29.

EV619619415US



PATENTS
Attorney Docket No. 9043MXL

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner	:	Keith D. Hendricks
Group Art Unit	:	1761
Applicant	:	David Vincent Zyzak et al.
Application No.	:	10/606,137 Confirmation No.: 3971
Filed	:	June 25, 2003
For	:	METHOD FOR REDUCING ACRYLAMIDE IN FOODS, FOODS HAVING REDUCED LEVELS OF ACRYLAMIDE, AND ARTICLE OF COMMERCE

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Mason, Ohio 45040
August 22, 2005

DECLARATION OF JANICE N. BATCHELOR SUBMITTED WITH SUGGESTION OF INTERFERENCE WITH ELDER ET AL. APPLICATION NO. 10/247,504, PURSUANT TO 37 C.F.R. § 41.202

Sir:

I, Janice N. Batchelor, declare that:

1. I am a Senior Researcher in the Personal Health Care Division of The Procter & Gamble Company ("P&G"), 8700 Mason Montgomery Rd., Mason, Ohio, 45040.

2. I understand that David Vincent Zyzak, Robert Alan Sanders, Marko Stojanovic, David Cammiade Gruber, Peter Yau Tak Lin, Maria Dolores Martinez-Serna Villagran, John Keeney Howie and Richard Gerald Schafermeyer ("Zyzak") are the named inventors of U.S. patent application Serial No. 10/606,137 (the "Zyzak '137 application"). I also understand that Zyzak is requesting that the U.S. Patent

and Trademark Office declare an interference between the Zyzak '137 application and Elder et al.'s U.S. patent application 10/247,504 (the "Elder '504 application"). I make this declaration in support of Zyzak's Suggestion of Interference with Elder et al. Application No. 10/246,504 pursuant to 37 C.F.R. § 41.202.

3. From 1995 to 1997, I was a co-op student in P&G's Food and Beverage Analytical Division.

4. In 1997, I received an Associate of Applied Science Degree in Chemical Technologies from Cincinnati State College.

5. Since October 1997, I have been a full time employee of P&G. In 1997, my title was Research Associate in P&G's Food and Beverage Analytical Division. In June 1999, I became a Safety Co-coordinator in P&G's Food and Beverage Analytical/Microbiology Division.

6. From May 2000 to September 2002, I was a Senior Researcher in P&G's Food and Beverage Analytical/Microbiology Division. Among my duties at that time was performing analytical work related to asparagine and aspartic acid.

7. In September 2002, I transferred as a Senior Researcher to P&G's Personal Health Care Division, a position I still hold today.

8. From October 1997 until I transferred to the Personal Health Care Division in September 2002, I was continuously involved in analytical work related to research and development. During that period, I completed numerous in-house training programs related to various analytical methods.

9. On August 2, 2002, Dr. David V. Zyzak, a Senior Scientist in P&G's Foods and Beverages Analytical/Microbiology Division, submitted four samples to P&G's Foods and Beverages Analytical/Microbiology lab for analyses of acrylamide, asparagine and aspartic acid levels. The samples were in jars labeled A1, A2, E1 and E2. I received a portion of each of the samples (the "Portions") so that I could perform analyses of the asparagine and aspartic acid contents.

10. On August 7, 2002, I performed an extraction on each of the four Portions described above in paragraph 9 to prepare them for reverse-phase high-pressure liquid chromatography ("RP-HPLC") testing. The extractions were performed as follows:

i. 1 gram of each of the four Portions was placed into four separate 125 milliliter Erlenmeyer flasks (the "Flasks").

ii. 48 milliliters of a 5% hydrochloric acid solution was separately added to each of the four Flasks.

iii. A solution was prepared by mixing 0.5 grams of aminoisobutyric acid, 25 milliliters of 1.0 normal hydrochloric acid and 100 milliliters of de-ionized and distilled water. The resulting mixture was swirled until the aminoisobutyric acid dissolved, and then the mixture was further diluted with de-ionized and distilled water until the total volume was 200 milliliters.

iv. 2 milliliters of the solution described above in paragraph 10(iii) was added separately to each of the four Flasks.

v. Each of the four Flasks was covered with aluminum foil and placed in a 60° C water bath for 30 minutes.

vi. 10 milliliters of dichloroethane was then added to each of the four Flasks, and the contents of the four Flasks were then homogenized for 60 seconds.

vii. Next, four 30 milliliter centrifuge tubes were filled using the contents of the four Flasks. The four centrifuge tubes were then centrifuged at 10,000 revolutions per minute for 32 minutes at 5° C.

viii. 2 milliliters of the supernatant from each of the four centrifuge tubes referred to above in paragraph 10(viii) was then transferred to four separate test tubes, and a Hamilton Microlab® SPE Robot was used to dilute the contents of these four test tubes with de-ionized and distilled water until the volume in each of the four test tubes was 40 milliliters.

ix. A Hamilton Microlab® SPE Robot was then used to contact the solutions contained in the four test tubes described above in paragraph 10(viii) with a reagent containing 9-fluorenylmethyl chloroformate, which reacts with asparagine and aspartic acid to form a highly fluorescent derivative.

x. The extractions were now ready for RP-HPLC testing.

11. On August 7, 2002, I tested the four extractions referred to above in paragraph 10(x) for asparagine and aspartic acid levels using RP-HPLC. The equipment I used for the RP-HPLC was located at the Winton Hill Business Center, a

P&G facility in Cincinnati, Ohio. The RP-HPLC equipment consisted of an Agilent HP1100 pump/HPLC injector with Chem Station software, a Waters 474 Scanning Fluorescence detector, and a Phemomex Luna chromatography column.

12. A true and correct copy of the results of the RP-HPLC tests described above in paragraph 11 is attached hereto as Exhibit A.

13. The results described above in paragraph 12 show that for the sample labeled A1, the asparagine content was 1131 parts per million ("ppm"), and the aspartic acid content was 189.2 ppm. For the sample labeled A2, the asparagine content was 1041.6 ppm, and the aspartic acid content was 178 ppm. For the sample labeled E1, the asparagine content was 129.5 ppm, and the aspartic acid content was 1307 ppm. For the sample labeled E2, the asparagine content was 195.5 ppm, and the aspartic acid content was 1826.5 ppm.

14. On August 8, 2002, I provided the RP-HPLC results described above in paragraph 12 to Dr. Zyzak.

15. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the Zyzak '137 application or any patent issuing therefrom.

Dated: August 11, 2005
Mason, Ohio

Janice N. Batchelor

DECLARATION OF JANICE N. BATCHELOR SUBMITTED WITH SUGGESTION OF INTERFERENCE WITH ELDER ET AL. APPLICATION NO. 10/247,504, PURSUANT TO 37 C.F.R. § 41.202

EXHIBIT A

Method Name: C:\CLASS-VP\METHODS\Asparagine extended.met
Sequence Name: C:\CLASS-VP\SEQUENCE\GLUCOSAMINE\02AUG07.seq
Data Name: C:\CLASS-VP\DATA\SORBEN\02AUG07-06
Sample ID; A1 1st Sample Set
User: System
Acquired: 8/7/2002 6:07:35 PM
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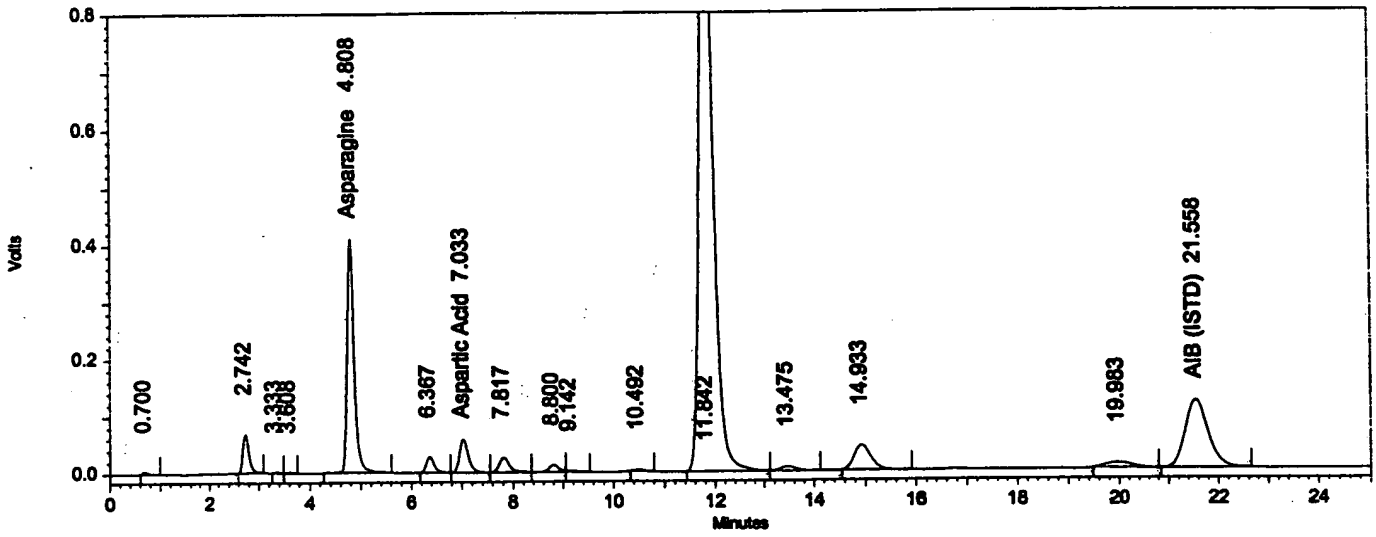

Sample Amount: 1

Multiplier Factor: 1

Fluorescence Detector (Ex:260nm, Em:313nm)

Pk #	Name	Retention Time	Area	ISTD concentration	Units
5	Asparagine	4.81	3949539	1131.042	ppm
7	Aspartic Acid	7.03	696440	189.169	ppm
16	AIB (ISTD)	21.56	3765554	0.000	ppm

...zu CLASS-VP V 5.03 External Standard Report

...thod Name: C:\CLASS-VP\METHODS\Asparagine extended.met
...equence Name: C:\CLASS-VP\SEQUENCE\GLUCOSAMINE\02AUG07.seq
Data Name: C:\CLASS-VP\DATA\SORBEN\02AUG07-07
Sample ID; A2 | st Sample Set
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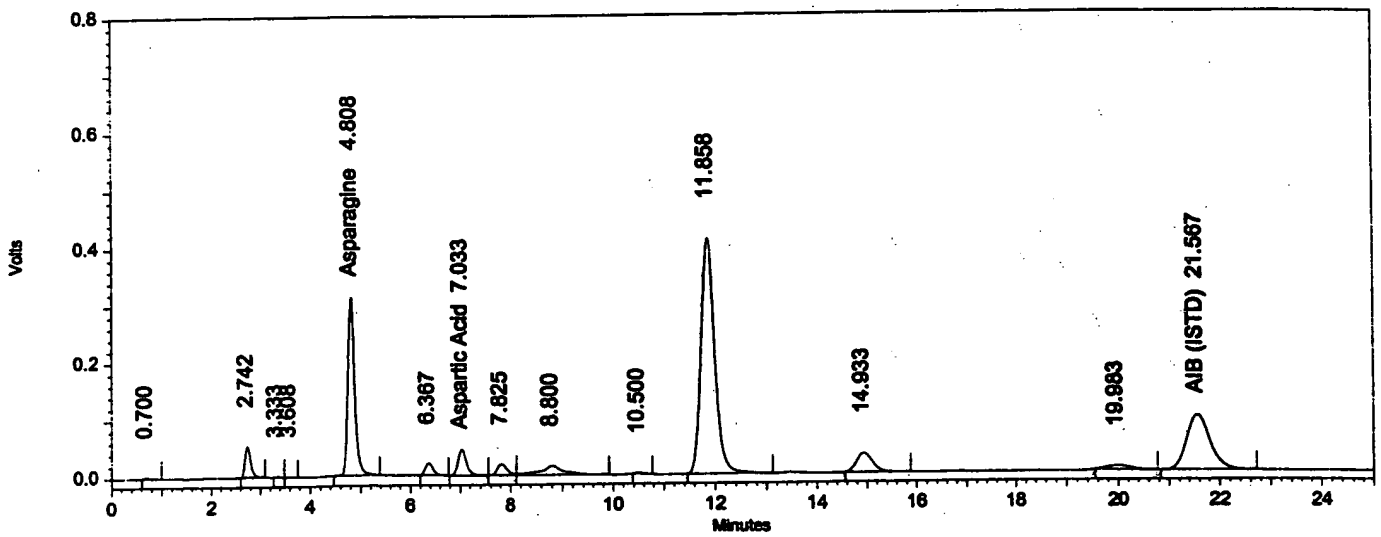

Sample Amount: 1

Multiplier Factor: 1

Fluorescence Detector (Ex:260nm, Em:313nm)

Pk #	Name	Retention Time	Area	ISTD concentration	Units
5	Asparagine	4.81	2949846	1041.552	ppm
7	Aspartic Acid	7.03	532709	177.953	ppm
14	AIB (ISTD)	21.57	3052920	0.000	ppm

Method Name: C:\CLASS-VP\METHODS\Asparagine extended.met
Sequence Name: C:\CLASS-VP\SEQUENCE\GLUCOSAMINE\02AUG07.seq
Data Name: C:\CLASS-VP\DATA\SORBEN\02AUG07-08
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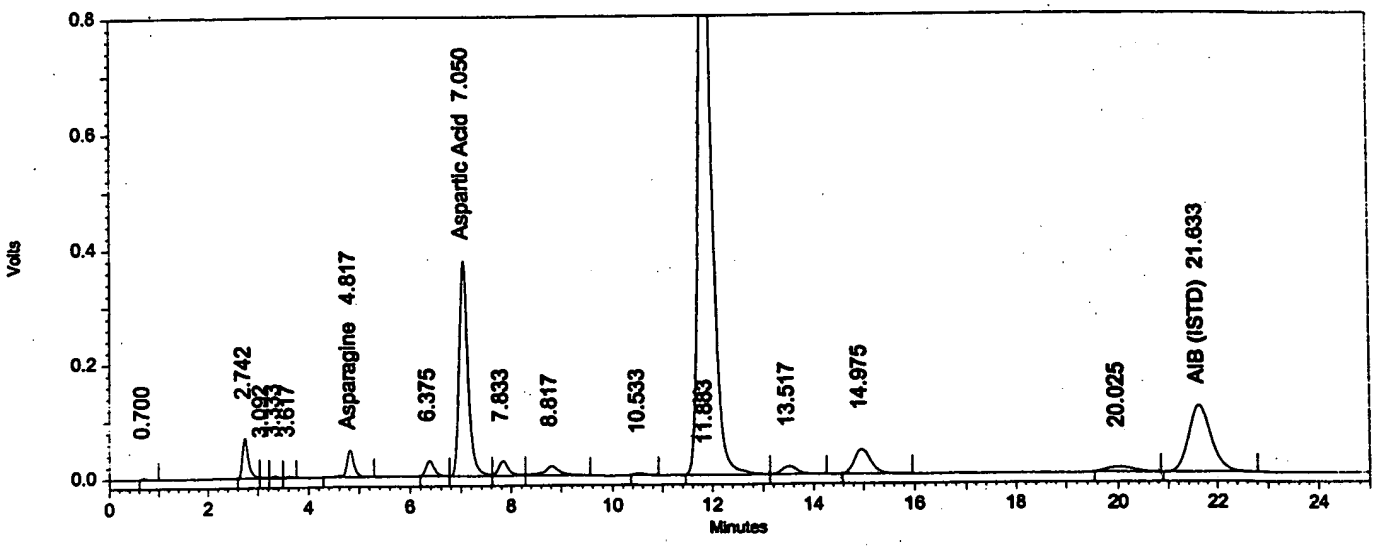

Sample Amount: 1

Multiplier Factor: 1

Fluorescence Detector (Ex:260nm, Em:313nm)

Pk #	Name	Retention Time	Area	ISTD concentration	Units
6	Asparagine	4.82	461708	129.529	ppm
8	Aspartic Acid	7.05	4562675	1307.031	ppm
16	AIB (ISTD)	21.63	3717360	0.000	ppm

Method Name: C:\CLASS-VP\METHODS\Asparagine extended.met
Sequence Name: C:\CLASS-VP\SEQUENCE\GLUCOSAMINE\02AUG07.seq
Data Name: C:\CLASS-VP\DATA\SORBEN\02AUG07-09
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User: System
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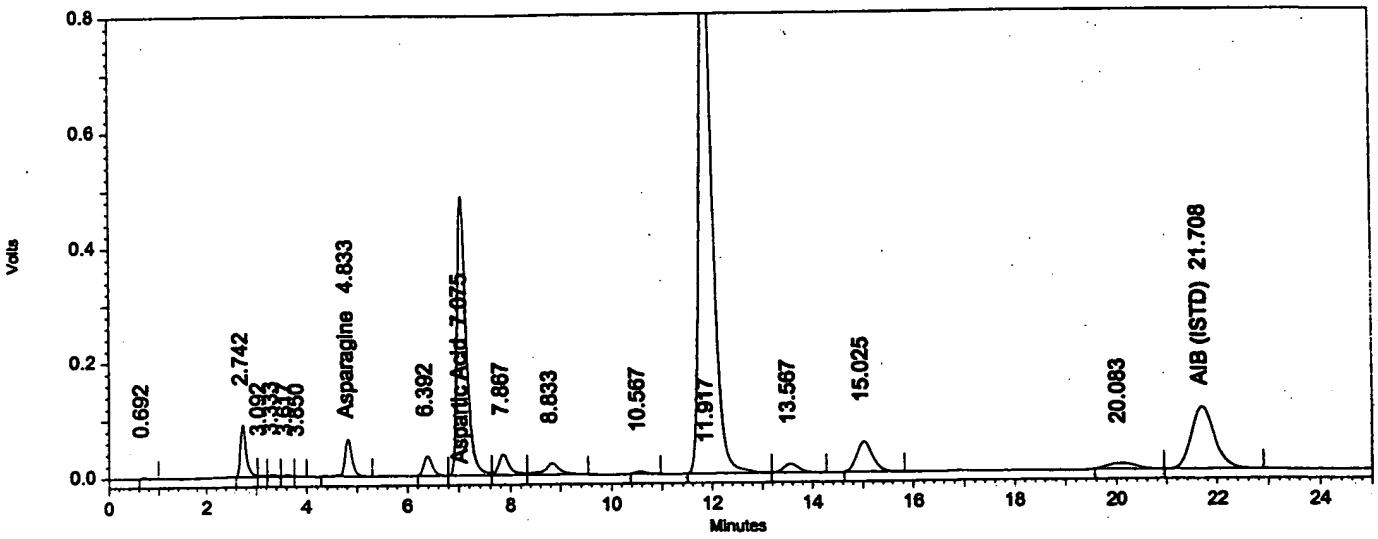


Sample Amount: 1

Multiplier Factor: 1

Fluorescence Detector (Ex:260nm, Em:313nm)

Pk #	Name	Retention Time	Area	ISTD concentration	Units
7	Asparagine	4.83	641523	195.516	ppm
9	Aspartic Acid	7.08	5932050	1826.512	ppm
17	AIB (ISTD)	21.71	3465326	0.000	ppm

PATENTS
Attorney Docket No. 9043MXL

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner	:	Keith D. Hendricks
Group Art Unit	:	1761
Applicant	:	David Vincent Zyzak et al.
Application No.	:	10/606,137 Confirmation No.: 3971
Filed	:	June 25, 2003
For	:	METHOD FOR REDUCING ACRYLAMIDE IN FOODS, FOODS HAVING REDUCED LEVELS OF ACRYLAMIDE, AND ARTICLE OF COMMERCE

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Lewisburg, Ohio 45338
August 22, 2005

DECLARATION OF KWAN Y. LEE SUBMITTED WITH SUGGESTION OF INTERFERENCE WITH ELDER ET AL. APPLICATION NO. 10/247,504, PURSUANT TO 37 C.F.R. § 41.202

Sir:

I, Kwan Y. Lee, declare that:

1. I am a Principal Scientist at Iams Co., 6571 State Route 503 North, Lewisburg, Ohio, 45338. Iams Co. is a division of The Procter & Gamble Company ("P&G").

2. I understand that David Vincent Zyzak, Robert Alan Sanders, Marko Stojanovic, David Cammiade Gruber, Peter Yau Tak Lin, Maria Dolores Martinez-Serna Villagran, John Keeney Howie and Richard Gerald Schafermeyer ("Zyzak") are the named inventors of U.S. patent application Serial No. 10/606,137 (the "Zyzak '137 application"). I also understand that Zyzak is requesting that the U.S. Patent and Trademark Office declare an interference between the Zyzak '137 application and

Elder et al.'s U.S. patent application 10/247,504 (the "Elder '504 application"). I make this declaration in support of Zyzak's Suggestion of Interference with Elder et al. Application No. 10/246,504 pursuant to 37 C.F.R. § 41.202.

3. I received a B.S. in Agricultural Chemistry from Seoul National University in 1968. I received a M.S. in Food Science and Technology from Seoul National University in 1973. I received a Ph.D. in Analytical Chemistry from The University of Houston in 1978. My Ph.D. thesis was "Capillary Column Gas Chromatographic Profile Analysis of Volatile Compounds in Sera of Normal and Virus Infected Patients." In 1979, I completed a postdoctoral fellowship at the University of Houston.

4. Since I completed my postdoctoral fellowship in 1979, I have continuously been employed at P&G in positions related to research and development of food products. Most of my work has been related to analytical test methods for food products such as coffee, fruit juices, potato chips, peanut butter and pet food. I am the author of numerous publications related to my research and development work with food products.

5. On August 9, 2002, I was a Principal Scientist in P&G's Food and Beverages Analytical/Microbiology Division in Cincinnati, Ohio.

6. On August 9, 2002, Dr. David V. Zyzak, a Senior Scientist in P&G's Food and Beverages Analytical/Microbiology Division, showed me pages 2 and 3 of his P&G Lab Notebook #WHS 2688 (the "Notebook").

7. Pages 2 and 3 of Dr. Zyzak's Notebook were dated August 1, 2002, and contained a description of an experiment that Dr. Zyzak conducted on August 1, 2002, entitled "Use of Asparaginase to decrease acrylamide formation in cooked foods" (the "Experiment"). I reviewed both pages.

8. The Experiment involved the preparation and treatment of four samples consisting of mashed potatoes mixed with distilled and deionized water. Two of the samples were treated with an enzyme called asparaginase in an attempt to reduce asparagine and acrylamide levels. The other two samples were not treated with asparaginase and served as controls.

9. Page 3 of the Notebook also contained a summary of results of analytical work that was performed on August 5, 2002 and August 7, 2002. Dr. Zyzak explained the results to me. The results showed that the two samples of mashed potatoes that were treated with asparaginase and subsequently heated had significantly less asparagine and acrylamide, and significantly more aspartic acid, than the two samples of mashed potatoes that were controls.

10. After Dr. Zyzak explained the Experiment and its results to me, I signed page 2 of the Notebook on the line next to the words "Corroborating Witness," and dated it August 9, 2002. I also dated page 3 of the Notebook, but did not sign it. My failure to sign page 3 was an oversight.

11. A true and correct copy of pages 2 and 3 of P&G Lab Notebook #WHS 2688 is attached hereto as Exhibit A. Pages 2 and 3 in Exhibit A appear as they were on August 9, 2002, when I reviewed them.

12. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the Zyzak '137 application or any patent issuing therefrom.

Dated: August 10, 2005
Lewisburg, Ohio

Kwan Lee 8-10-05
Kwan Y. Lee

DECLARATION OF KWAN Y. LEE SUBMITTED WITH SUGGESTION OF INTERFERENCE WITH ELDER ET AL. APPLICATION NO. 10/247,504, PURSUANT TO 37 C.F.R. § 41.202

EXHIBIT A

Date August 1, 2002 **P&G Restricted**

Subject Use of Asparaginase to decrease acrylamide formation in cooked foods

Background: Our data suggest that asparagine is the source of acrylamide formation in heated potatoes (and possibly in all foods). If we use the enzyme asparaginase, which converts asparagine to aspartic acid, we should be able to drease acrylamide formation in heated potatoes.

Reagents / Supplies:

① Mashed potatoes - made by boiling baking potatoes, obtained from local Supermarket, for 2 hrs. The boiled potatoes are de-peeled and mashed with a fork.

② Asparaginase
Sigma A 2925 (500 units) dissolved in 1.0 mL distilled and deionized water.
One unit definition: One unit will liberate 1.0 μmole of NH_3 from L-asparagine per minute at pH 8.6 at 37°C
[Vial is labeled as 3.6 mg solid and protein content is 40%]

③ Panasonic Microwave Model NN-S548A

Procedure to prepare mashed potato slurry:

① Take 100 g of mashed potatoes
② Add 100 g of distilled and deionized water
③ Homogenize until uniform and no lumps are visible.

Experiments:

① Take 30 g of mashed potato slurry and place in 8oz glass jar.
② Add 30 g distilled and deionized water.

This was done to prepare 4 jars labeled A1, A2, E1, + E2

③ To jars labeled E1 and E2, add 100 μL of the asparaginase solution. This is equivalent to 50 units or approximately 1.44 mg protein.

Worker's Signature _____ **Date** August 1, 2002

Corroborating Witness Susan Lee **Date** Aug. 9 2002

Date August 1, 2002 P&G Restricted

Subject Asparaginase continued from p. 2

④ Let samples stand at room temperature for 30 min with occassional stirring/swirling every 5 min. (E1 + E2)

⑤ To deactivate enzyme: Microwave samples for 2 min on high setting. Treat samples without asparaginase (A1 + A2) the same.

[Microwaving was done in pairs A1 + A2 together; E1 + E2 together]

⑥ Continue to microwave in 2 min sessions until slurry is dried. This took 4 sessions and all 4 samples (A1, A2, ~~A~~ E1, E2) turned reddish-brown. There was no apparent difference between A1, A2, E1, and E2 in color or degree of dryness. The microwave drying appeared to work well. The aroma of A1, A2, E1, + E2 were very similiar - vegetable protein like, similiar to a mild Hydrolyzed Plant Protein (HPP) with potato undertones.

⑦ Submit samples for acrylamide analysis and asparagine analysis.

(Maromass LC-MS)

Sample	Dalible	Acrylamide (ppb)	Dalible	Asparagine (ppm)	Aspartic Acid (ppm)
A1	AUG05a1	21,605	02AUG07-06	1131.0	189.2
A2	AUG05a2	20,543	02AUG07-07	1041.6	178.0
E1	AUG05l1	385	02AUG07-08	129.5	1307.0
E2	AUG05l2	164	02AUG07-09	195.5	1826.5

Results:

① 98.7 % inhibition of acrylamide formation with asparaginase.

Worker's Signature [signature] Date August 1, 2002

Corroborating Witness _____ Date August 9 2002

PATENTS
Attorney Docket No. 9043MXL

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner	:	Keith D. Hendricks
Group Art Unit	:	1761
Applicant	:	David Vincent Zyzak et al.
Application No.	:	10/606,137 Confirmation No.: 3971
Filed	:	June 25, 2003
For	:	METHOD FOR REDUCING ACRYLAMIDE IN FOODS, FOODS HAVING REDUCED LEVELS OF ACRYLAMIDE, AND ARTICLE OF COMMERCE

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Cincinnati, Ohio 45224
August 22, 2005

DECLARATION OF DAVID VINCENT ZYZAK SUBMITTED WITH SUGGESTION OF INTERFERENCE WITH ELDER ET AL. APPLICATION NO. 10/247,504, PURSUANT TO 37 C.F.R. § 41.202

Sir:

I, David Vincent Zyzak, declare that:

1. I am a Senior Scientist at The Procter & Gamble Company ("P&G"), Winton Hill Business Center, 6300 Center Hill Avenue, Cincinnati, Ohio, 45224.

2. I understand that myself, Robert Alan Sanders, Marko Stojanovic, David Cammiade Gruber, Peter Yau Tak Lin, Maria Dolores Martinez-Serna Villagran, John Keeney Howie and Richard Gerald Schafermeyer ("Zyzak") are the named inventors of U.S. patent application Serial No. 10/606,137 (the "Zyzak '137 application"). I also understand that Zyzak is requesting that the U.S. Patent and

Trademark Office declare an interference between the Zyzak '137 application and Elder et al.'s U.S. patent application 10/247,504 (the "Elder '504 application"). I make this declaration in support of Zyzak's Suggestion of Interference with Elder et al. Application No. 10/246,504 pursuant to 37 C.F.R. § 41.202.

3. I received a B.S. in Chemistry from Old Dominion University in 1989. I received a Ph.D. in Biochemistry from the University of South Carolina in 1995. My Ph.D. thesis was "Studies on the Maillard reaction: mechanism of the fructosamine assay, decomposition of Amadori adducts on protein, and reaction of 3-deoxyglucosone with arginine residues in protein."

4. Since I earned my Ph.D. in 1995, I have continuously been employed in research and development positions in the food industry. I am the author of numerous publications related to my research and development work in the food industry.

5. From August 1995 until November 1997, I worked for Nestle in New Milford, Connecticut, as a Developmental Technologist and Process Flavor Chemist.

6. From November 1997 until September 1999, I worked for Takasago Institute, a flavors and fragrances company located in Rockleigh, New Jersey. My position at Takasago was Senior Scientist.

7. In September 1999, I started working for P&G in Cincinnati, Ohio. When I joined P&G, my position was Scientist in P&G's Food and Beverage Analytical/Microbiology Division. In September 2000, I was promoted to Senior Scientist. In 2002, the name of the Food and Beverage Analytical/Microbiology Division

was changed to Snacks and Beverage Analytical/Microbiology. In 2004, the name was changed again to Household Care Analytical. Today I am a Senior Scientist in P&G's Household Care Analytical Division. I am also the Coordinator of Coffee Analytical Support. During my employment at P&G, I have worked continuously in research and development related to snack food products.

8. On August 1, 2002, I conducted an experiment entitled "Use of Asparaginase to decrease acrylamide formation in cooked foods" (the "Experiment"). The Experiment was conducted at the Winton Hill Business Center, a P&G facility in Cincinnati, Ohio.

9. On August 1, 2002, I recorded the details of how I conducted the Experiment on pages 2 and 3 in my P&G Lab Notebook #WHS 2688.

10. A true and correct copy of the cover, instruction sheet, and pages 2 and 3 of my P&G Lab Notebook #WHS 2688 is attached hereto as Exhibit A.

11. In the Experiment's first step, baking potatoes were boiled for two hours. The potatoes were then peeled and mashed with a fork.

12. Next, 100 grams of the mashed potatoes that were prepared in the Experiment's first step were mixed with 100 grams of distilled and de-ionized water, and the resulting mixture was homogenized until it was uniform and no lumps were visible.

13. Next, four samples were prepared. Each sample consisted of 30 grams of the mixture described above in paragraph 12, mixed with 30 grams of distilled and de-ionized water. Each sample was placed in an eight ounce glass jar, and the four samples were labeled A1, A2, E1 and E2, respectively.

14. A solution was prepared consisting of 500 units of asparaginase dissolved in 1.0 milliliter of distilled and deionized water. One unit of asparaginase is defined as the amount of asparaginase that will liberate 1.0 micromole of NH_3 from L-asparagine per minute at 37° C and a pH of 8.6. The asparaginase I used was ordered on July 17, 2002 from VWR, a vendor that arranges ordering and shipping of scientific products within P&G. A true and correct copy of the July 17, 2002 email I sent to VWR asking that they order the asparaginase from Sigma-Aldrich Inc. is attached hereto as Exhibit B. A true and correct copy of the Sigma-Aldrich Inc. invoice for the July 17, 2002 asparaginase order is attached hereto as Exhibit C.

15. 100 microliters of the asparaginase solution described above in paragraph 14 was added to the jar labeled E1, and 100 microliters of the same solution was added to the jar labeled E2. No asparaginase solution was added to the jars labeled A1 and A2, as those jars served as controls.

16. Next, the four samples described above in paragraph 15 were allowed to stand at room temperature for 30 minutes with occasional stirring to allow the apasarginase in the jars labeled E1 and E2 to react with the asparagine in the potatoes.

17. The four samples described above in paragraph 16 were then micro-waved for two minutes to deactivate the asparaginase in the jars labeled E1 and E2.

18. The four samples described above in paragraph 17 were then micro-waved in two minute sessions until the samples were cooked. This required four two minute sessions, for a total of eight minutes.

19. The four samples described above in paragraph 18 were then sent to P&G's Foods and Beverages Analytical/Microbiology lab for analyses of the acrylamide, asparagine and aspartic acid contents of the samples. Deborah K. Ewald performed the acrylamide testing, and Janice N. Batchelor performed the asparagine and aspartic acid testing.

20. On August 5, 2002, I received the results of the acrylamide analysis from Deborah Ewald. These results were tabulated in a spreadsheet, a true and correct copy of which is attached hereto as Exhibit D. I also recorded these results on page 3 of my Lab Notebook #WHS 2688 (Exhibit A).

21. The August 5, 2002 lab results show that for the jars labeled A1 and A2 (the two samples that were not treated with the asparaginase solution), the acrylamide levels were 21,605 and 20,543 parts per billion ("ppb") respectively. For the jars labeled E1 and E2 (the two samples that were treated with the asparaginase solution), the acrylamide levels were 385 and 164 ppb, respectively.

22. The results described above in paragraphs 20 and 21 demonstrate that, in the case of the samples in the jars labeled E1 and E2, the addition of asparaginase to the mashed potato mixture caused the acrylamide levels to be reduced by over 98% after cooking, as compared to the levels of acrylamide in the untreated samples in the jars labeled A1 and A2.

23. On August 8, 2002, I received the results of the asparagine and aspartic acid analyses from Janice N. Batchelor. Those analyses were performed on

August 7, 2002. A true and correct copy of those results is attached hereto as Exhibit E. I also recorded those results on page 3 of Lab Notebook #WHS 2688 (Exhibit A).

24. The lab results I received on August 8, 2002 show that for the jars labeled A1 and A2 (the two samples that were not treated with the asparaginase solution), the asparagine levels were 1131.0 and 1041.6 parts per million ("ppm"), respectively. For the jars labeled E1 and E2 (the two samples that were treated with the asparaginase solution), the asparagine levels were 129.5 and 195.5 ppm, respectively. For the jars labeled A1 and A2 (the two samples that were not treated with the asparaginase solution), the aspartic acid levels were 189.2 and 178 ppm, respectively. For the jars labeled E1 and E2 (the two samples that were treated with the asparaginase solution), the aspartic acid levels were 1307 and 1826.5 ppm, respectively.

25. The results described above in paragraphs 23 and 24 demonstrate that, in the case of the samples in the jars labeled E1 and E2, the addition of asparaginase to the mashed potato mixture caused the asparagine levels to be reduced by over 85% after cooking, as compared to the levels of asparagine in the untreated samples in the jars labeled A1 and A2.

26. The results described above in paragraphs 23 and 24 demonstrate that, in the case of the samples in the jars labeled E1 and E2, the addition of asparaginase to the mashed potato mixture caused the aspartic acid levels to be increased by over 753% after cooking, as compared to the levels of aspartic acid in the untreated samples in the jars labeled A1 and A2.

27. On August 9, 2002, I explained the Experiment, its results, and the significance of the results, to Dr. Kwan Y. Lee, a Principal Scientist in P&G's Food and Beverages Analytical/Microbiology Division in Cincinnati, Ohio. I also showed him pages 2 and 3 of my P&G Lab Notebook #WHS 2688 (Exhibit A). Dr. Lee signed and dated page 2 of my August 1, 2002 entry in Lab Notebook #WHS 2688. He also dated page 3, but did not sign it. I believe that Dr. Lee's failure to sign page 3 was an oversight.

28. I understand that claim 1 of the Zyzak '137 application reads as follows:

> A method for reducing the level of asparagine in a food material, comprising adding an asparagine-reducing enzyme to the food material before heating.

29. The Experiment discussed above in paragraphs 11 through 19 corresponds to claim 1 of the Zyzak '137 application. In the Experiment, I reduced the level of asparagine in mashed potatoes (a food material) by adding asparaginase (an asparagine-reducing enzyme) to a mixture of mashed potatoes and water before I heated the mixture in a microwave oven.

30. I understand that claim 10 of the Zyzak '137 application reads as follows:

> A method for reducing the level of acrylamide in food, comprising:
>
> (a) adding an asparagine-reducing enzyme to a food material, wherein said food material comprises asparagine;

(b) optionally mixing the enzyme with the food material;

(c) allowing a sufficient time for the enzyme to react with asparagine;

(d) optionally deactivating or optionally removing the enzyme; and

(e) heating the food material to form the finished food product.

31. The Experiment discussed above in paragraphs 11 through 19 corresponds to claim 10 of the Zyzak '137 application. In the Experiment, I mixed a solution containing asparaginase (an asparagine-reducing enzyme) with a mixture of mashed potatoes (a food material that contains asparagine) and water. I then allowed the mixture of asparaginase solution, mashed potatoes and water to sit for 30 minutes, which was sufficient time for the asparaginase to react with asparagine. I then deactivated the asparaginase by micro-waving the mixture for two minutes. I then heated the mixture for a total of eight minutes in a micro-wave oven, at which point it was cooked. I then had the cooked material tested for acrylamide. The acrylamide levels were more than 98% lower than acrylamide levels in the control runs that were not treated with the apsaraginase solution.

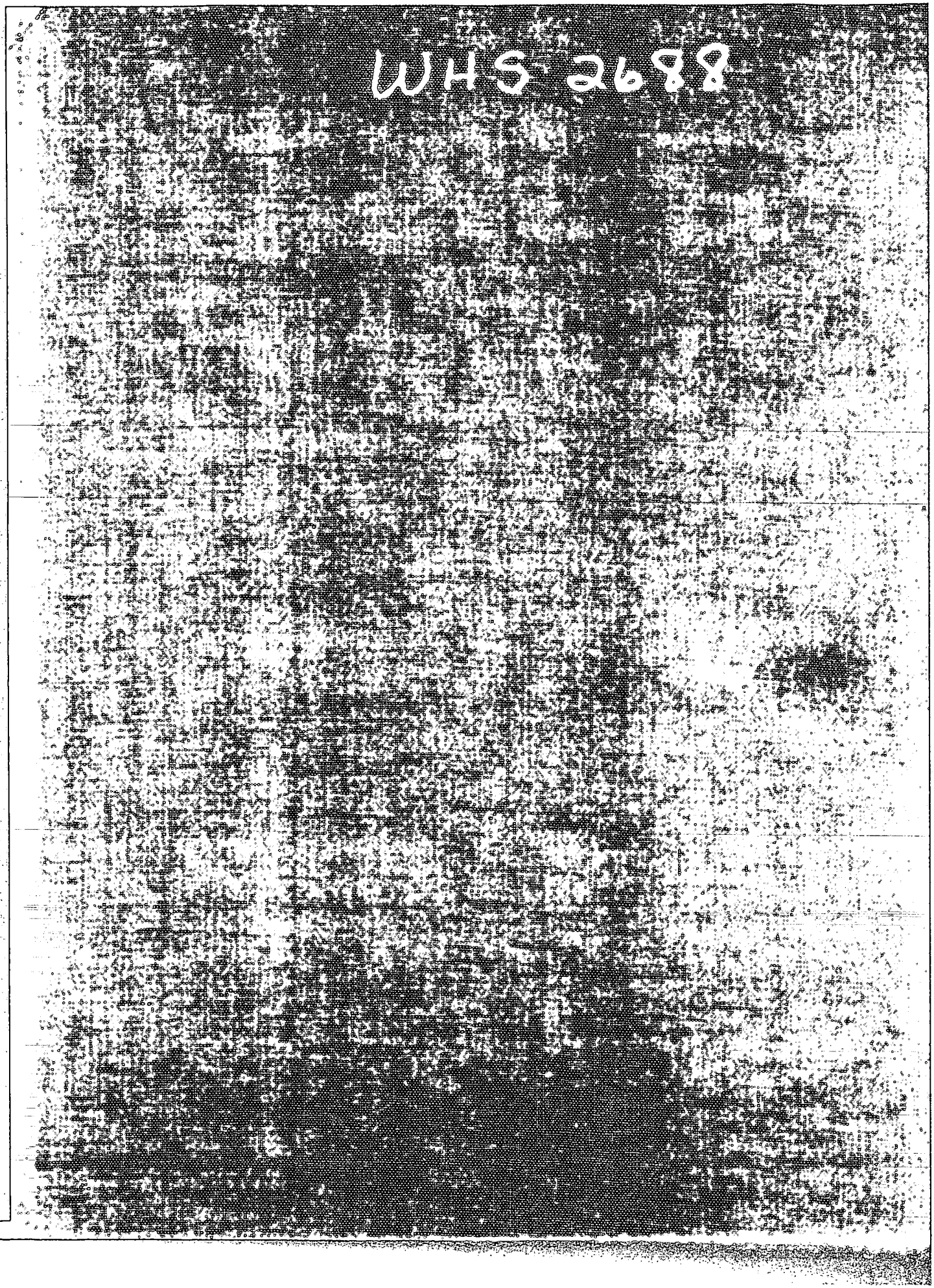
32. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the Zyzak '137 application or any patent issuing therefrom.

Dated: August 10, 2005
Cincinnati, Ohio

David Vincent Zyzak

DECLARATION OF DAVID V. ZYZAK SUBMITTED WITH SUGGESTION OF INTERFERENCE WITH ELDER ET AL. APPLICATION NO. 10/247,504, PURSUANT TO 37 C.F.R. § 41.202

EXHIBIT A



LABORATORY BOOK NO. WHS 2688 CORRESPONDING LOOSE-LEAF NOTEBOOK

DATE ISSUED 7/16/02

ASSIGNED TO David Zyzak

DATE OF LAST ENTRY

DATE RETURNED

DIVISION 5155

TRANSFERRED TO:

NAME _____ NAME _____ NAME _____

DATE _____ DATE _____ DATE _____

WHTC

INSTRUCTIONS FOR ENTERING DATA IN LABORATORY NOTEBOOKS

LABORATORY NOTEBOOKS ARE LEGAL DOCUMENTS. NOTEBOOKS NOT COMPLYING WITH SPECIFICATIONS MAY BE RETURNED FOR CORRECTION.

DATA ENTRIES

A. Enter data into the notebook as the work is being performed. Entries must be made in permanent black ink only. DO NOT USE PENCIL OR FELT TIP PEN to enter data in notebook. Enter the date the work is started at the top of the page. Enter the title of the work on the top line immediately following the date.

B. Describe the purpose of the work at the outset.

C. Give a narrative description of what was done, and indicate the sequence in which each step was taken. Cross-reference data entries as appropriate for maximum clarity. For example, if analytical results on coded samples are entered in the notebook, enter the notebook and page number where the sample description can be found and provide references to procedures or analytical methods used.

D. Define trade-named materials, acronyms or jargon, the first time they are used. Show the mathematical formula for all calculations and a sample calculation if the principle is not obvious. Computer programs used for data analysis should be referenced.

E. Enter factual results only. These include data as well as observations. Opinions should not be recorded in the notebook. Comments implying failure should be avoided.

F. Make entries on a given subject on consecutive pages where practical. Restrict each page to a single subject or test. When considerable work on a single subject is to be done, reserve a single notebook for the work whenever practical.

G. Do not skip pages. When unavoidable, cross through blank page(s) in ink, initial and date. Blank partial pages should also be crossed through in ink, initialed and dated.

H. Do not erase or use correction fluid in notebooks. When corrections are necessary:
   1. Cross out the original entry such that it remains legible;
   2. Enter the correction along with an explanation as to why the correction is necessary; and
   3. Date and initial the correction.

I. DO NOT USE HIGHLIGHTER

ATTACHMENTS

A. Limit attachments to no more than one item every other page. Use rub-on glue or tape only to make attachments. Place tape or glue on at least three entire edges of the item being attached. DO NOT STAPLE attachments in notebook.

B. Attachments must be placed BETWEEN the DOUBLE LINES on the top and bottom of a page. Sign and date the item across the point of attachment. Do not reduce attachment unless the full size original exists in a referenced loose-leaf notebook. The reduction must be completely legible.

C. FOLD-OUT ATTACHMENTS AND OVERLAPPING ATTACHMENTS ARE STRICTLY PROHIBITED.

SIGNATURES AND DATES

A. Minimum patentability standards require each notebook page to have two signatures: the person doing the work and a corroborating witness. A corroborating witness must be an unbiased non-inventor who preferably witnessed performance of the work in its entirety. The person doing the work must sign and date each notebook page.

B. Good Laboratory Practices (GLP's) require all entries on a page that are made on a date other than the date at the top of the page to show the current date and initials of the person making the entry.

C. Good Manufacturing Practices (GMP's) require production records to be signed by the person doing the work and by an independent observer. Laboratory Control records are required to be dated and signed by the person doing the work and by the person reviewing the records.

RESPONSIBILITY

A. The person to whom this book is issued is responsible for returning it to the issuing Library as soon as it is no longer in active use.

B. Incomplete notebooks can be transferred to another person if both parties agree to the transfer and certify the transfer with the Internal Records Administrator at the issuing Library.

C. This notebook must be indexed and have keywords assigned by the user before returning it to the Library. It must also include explicit cross-reference to all other loose-leaf and hardbound notebooks which contain related work.

Revised 8/95

Date August 1, 2002 **P&G Restricted**

Subject Use of Asparaginase to decrease acrylamide formation in cooked foods

Background: Our data suggest that asparagine is the source of acrylamide formation in heated potatoes (and possibly in all foods). If we use the enzyme asparaginase, which converts asparagine to aspartic acid, we should be able to decrease acrylamide formation in heated potatoes.

Reagents / Supplies:

① Mashed potatoes - made by boiling baking potatoes, obtained from local supermarket, for 2 hrs. The boiled potatoes are de-peeled and mashed with a fork.

② Asparaginase
Sigma A 2925 (500 units) dissolved in 1.0 mL distilled and deionized water.
One unit definition: One unit will liberate 1.0 μmole of NH_3 from L-asparagine per minute at pH 8.6 at 37°C
[Vial is labeled as 3.6 mg solid and protein content is 40%]

③ Panasonic Microwave Model NN-S548A

Procedure to prepare mashed potato slurry:

① Take 100 g of mashed potatoes.
② Add 100 g of distilled and deionized water
③ Homogenize until uniform and no lumps are visible.

Experiments:

① Take 30 g of mashed potato slurry and place in 8 oz glass jar.
② Add 30 g distilled and deionized water.

This was done to prepare 4 jars labeled A1, A2, E1, + E2

③ To jars labeled E1 and E2, add 100 uL of the asparaginase solution. This is equivalent to 50 units or approximately 1.44 mg protein.

Worker's Signature _____ **Date** August 1, 2002

Corroborating Witness Renan Lee **Date** Aug 9 2002

Date August 1, 2002 **P&G Restricted**

Subject Asparaginase continued from p. 2

(4) Let samples stand at room temperature for 30 min with ocassional stirring/swirling every 5 min. (E1 + E2)

(5) To deactivate enzyme: Microwave samples for 2 min on high setting. Treat samples without asparaginase (A1 + A2) the same.

[Microwaving was done in pairs A1 + A2 together; E1 + E2 together]

(6) Continue to microwave in 2 min sessions until slurry is dried. This took 4 sessions and all 4 samples (A1, A2, ~~A~~ E1, E2) turned reddish-brown. There was no apparent difference between A1, A2, E1, and E2 in color or degree of dryness. The microwave drying appeared to work well. The aroma of A1, A2, E1, + E2 were very similiar - vegetable protein like, similiar to a mild Hydrolyzed Plant Protein (HPP) with potato undertones.

(7) Submit samples for acrylamide analysis and asparagine analysis.

(Maromass LC-MS)

Sample	Vial/Label	Acrylamide (ppb)	Vial/Label	Asparagine (ppm)	Aspartic Acid (ppm)
A1	AUGOS01	21,605	02AUG07-06	1131.0	189.2
A2	AUGOS10	20,543	02AUG07-07	1041.6	178.0
E1	AUGOS11	385	02AUG07-08	129.5	1307.0
E2	AUGOS12	164	02AUG07-09	195.5	1826.5

Results:

(1) 98.7 % inhibition of acrylamide formation with asparaginase.

Worker's Signature [signature] Date August 1, 2002

Corroborating Witness _____ Date August 9 2002

DECLARATION OF DAVID V. ZYZAK SUBMITTED WITH SUGGESTION OF INTERFERENCE WITH ELDER ET AL. APPLICATION NO. 10/247,504, PURSUANT TO 37 C.F.R. § 41.202

EXHIBIT B

David Zyzak-DV
07/17/2002 11:06 AM

To: Special Vwr-IM/PGI
cc:
Subject: order

I would like to order the following chemical from sigma 1-800-325-3010.

item	catalog Number	quantity	size	price
Asparaginase	A 2925	3	500 units	82.35 (each)

needed by Tuesday July 23

Please mail to:

Debbie Ewald (Room F1B30)
P&G
6071 Center Hill Ave.
Cincinnati, OH 45224

Please charge to my AMEX:
3787 325567 41009
Exp. 3/03

Thanks,
David Zyzak

DECLARATION OF DAVID V. ZYZAK SUBMITTED WITH SUGGESTION OF INTERFERENCE WITH ELDER ET AL. APPLICATION NO. 10/247,504, PURSUANT TO 37 C.F.R. § 41.202

EXHIBIT C

SOLD TO:
PROCTER & GAMBLE CO (SELECT)
PO BOX 5555
CINCINNATI OH 45201-5555

SHIP-TO:
DEBORAH EWALD
PROCTER & GAMBLE CO
ROOM F1830
4242644130
6071 CENTER HILL AVE
CINCINNATI OH 45224

BILL TO:
PROCTER & GAMBLE CO (SELECT)
PO BOX 5555
CINCINNATI OH 45201-5555

SIGMA-ALDRICH

REMITTANCES TO: SIGMA-ALDRICH INC., PO BOX 932594
ATLANTA, GA 31193
fein: 43-17422718
FOR GENERAL INFORMATION
Sigma - 800-521-8956 Supelco - 800-247-6628
Aldrich, Fluka, Riedel-de-Haen - 800-771-6737
e-mail-sigald@sial.com Home Page: http://www.sigma-aldrich.com
Phone Collect from Anywhere in the world (314)771-5750

INVOICE NUMBER
98541317
SHIP DATE/INVOICE DATE
07/17/2002 07/17/2002
TERMS/DUE DATE
CREDIT CARD 07/17/2002
SOLD TO CUSTOMER NUMBER
49469413
PURCHASE ORDER NUMBER
CC/EWALD

CONTACT: 513-983-1100

MATERIAL NUMBER BATCH NUMBER	DESCRIPTION HTS CODE/COUNTRY OF ORIGIN/SHIP TO CUSTOMER NUMBER	SHIPPED FROM ROUTING	DELIVERY NUMBER BOX NUMBER	QUANTITY	UOM	UNIT PRICE	EXTENDED PRICE
A2925-500UN 081H3811	ASPARAGINASE FROM ERWINIA CHRYSANTHEMI 3507.90.7000 / GB / 49469418	SIGMA CHE AIRBORNE	810763661	3 EA		82.35	247.05
		Sub Total					247.05
		Trans / Handling					10.06
		Amount Charged to Credit Card Number: XXXXXXXX6711009					257.11

"To ensure proper postings of your payments, please indicate invoice numbers on your payment advice & mail it to the remittance address indicated. Thank You."

All sales are expressly limited to the conditioned upon the terms and conditions appearing on the front and back of this form.

FCA

Total Amount Due 0.00

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JHOLMES - 07/19/2005

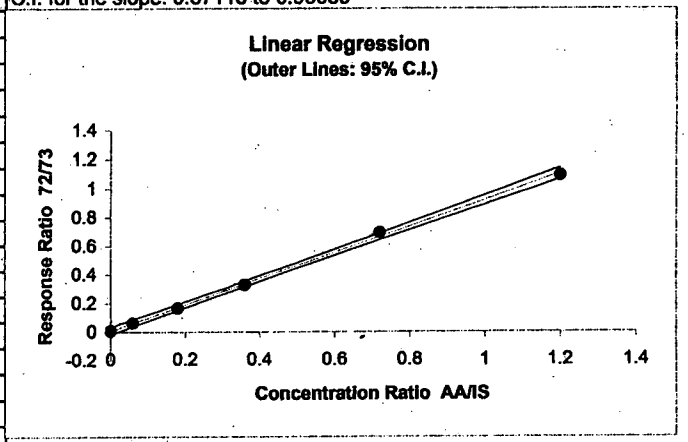
DECLARATION OF DAVID V. ZYZAK SUBMITTED WITH SUGGESTION OF INTERFERENCE WITH ELDER ET AL. APPLICATION NO. 10/247,504, PURSUANT TO 37 C.F.R. § 41.202

EXHIBIT D

ACRYLAMIDE	**8/5/2002**			
Concentration Ratio	**Response Ratio**			
0	0.0072			
0.06	0.0608			
0.180	0.1664			
0.360	0.3292			
0.720	0.6951			
1.200	1.0922			
INTERCEPT	0.007			
SLOPE	0.92			
CORR.	0.9994			
SAMPLE	**Response Ratio**		**ppb**	
WRM - 2	0.1654	0.173	328	
A - 1	10.4205	11.371	21605	*
A - 2	9.9087	10.812	20543	*
E - 1	0.1926	0.202	385	
E - 2	0.0863	0.086	164	
Samples were extracted on 8/02/02, analyzed on 8/5/02.				
*** Out of range of calibration curve 50 - 2000 ppb.**				

CustomStat 8.0.0 Runtime: 8/5/02 10:38:40 AM
Linear Regression Analysis - 1st Degree, Y=B(1)*X + B(0):
No. of Observations = 6
X Mean = 0.42000; Y Mean = 0.39182
Coeff of Det (r^2) = 0.99877; Corr. Coeff (r) = 0.99938
Std-Err-Estimate = 0.01659
% Relative Y Intercept for Y = 0.39182 is 1.83573; % Variation = 4.23482

Range = 0 - 1.2
Residual Sum of Squares = 0.00110
Intercept = 0.00719 Std. Err: 0.00956
Slope = 0.91577 Std. Err: 0.01607
T-ratio for 'Ho: Slope = 0' hypothesis = 56.97265
(95% Confidence Intervals) T = 2.77600
C.I. for the Intercept: -0.01936 to 0.03374
C.I. for the slope: 0.87115 to 0.96039



DECLARATION OF DAVID V. ZYZAK SUBMITTED WITH SUGGESTION OF INTERFERENCE WITH ELDER ET AL. APPLICATION NO. 10/247,504, PURSUANT TO 37 C.F.R. § 41.202

EXHIBIT E

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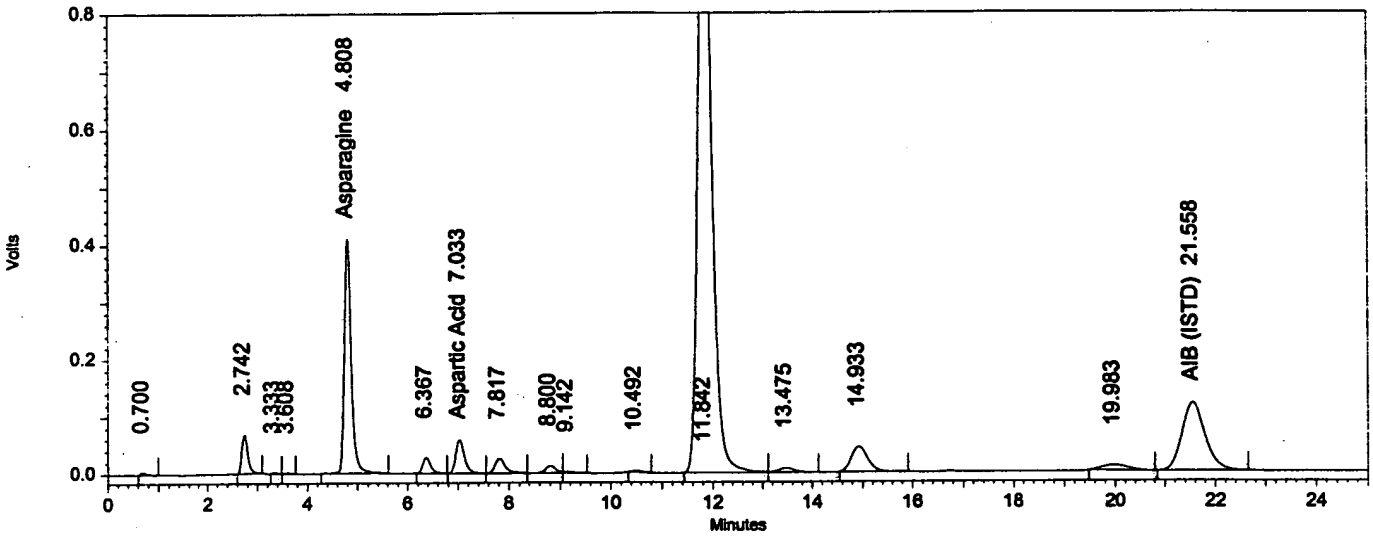
Printed: 8/7/2002 6:34:07 PM



Sample Amount: 1

Multiplier Factor: 1

Fluorescence Detector (Ex:260nm, Em:313nm)

Pk #	Name	Retention Time	Area	ISTD concentration	Units
5	Asparagine	4.81	3949539	1131.042	ppm
7	Aspartic Acid	7.03	696440	189.169	ppm
16	AIB (ISTD)	21.56	3765554	0.000	ppm

thod Name: C:\CLASS-VP\METHODS\Asparagine extended.met
Sequence Name: C:\CLASS-VP\SEQUENCE\GLUCOSAMINE\02AUG07.seq
Data Name: C:\CLASS-VP\DATA\SORBEN\02AUG07-07
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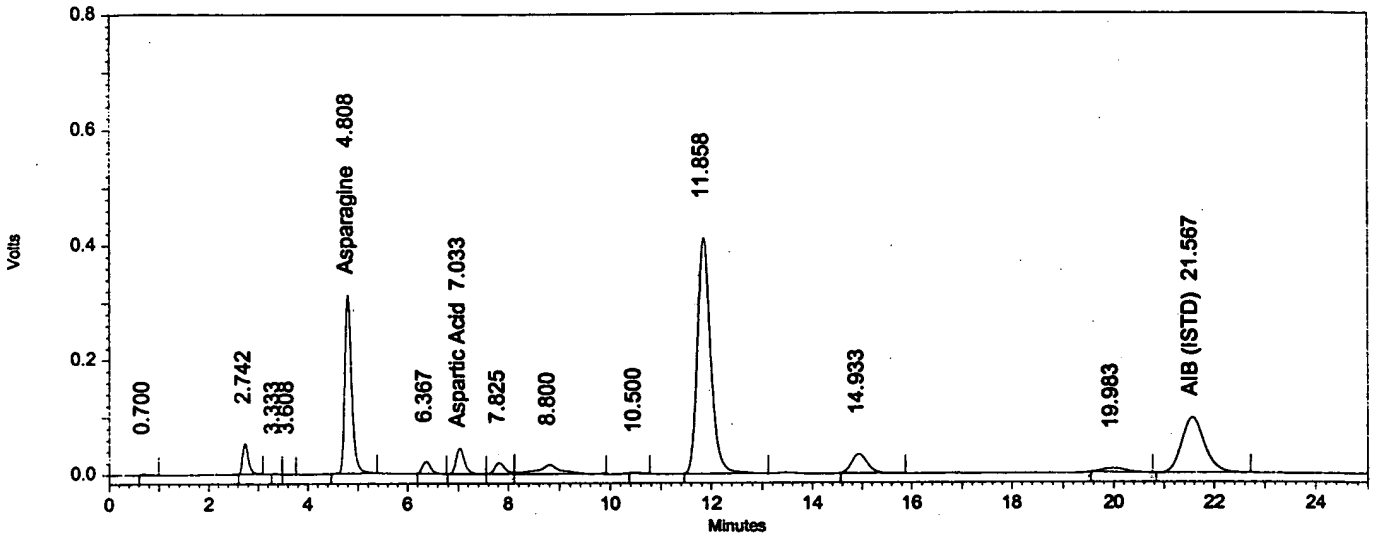
Printed: 8/7/2002 7:00:41 PM



Sample Amount: 1

Multiplier Factor: 1

Fluorescence Detector (Ex:260nm, Em:313nm)

Pk #	Name	Retention Time	Area	ISTD concentration	Units
5	Asparagine	4.81	2949846	1041.552	ppm
7	Aspartic Acid	7.03	532709	177.953	ppm
14	AIB (ISTD)	21.57	3052920	0.000	ppm

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Sequence Name: C:\CLASS-VP\SEQUENCE\GLUCOSAMINE\02AUG07.seq
Data Name: C:\CLASS-VP\DATA\SORBEN\02AUG07-08
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Acquired: 8/7/2002 7:00:42 PM
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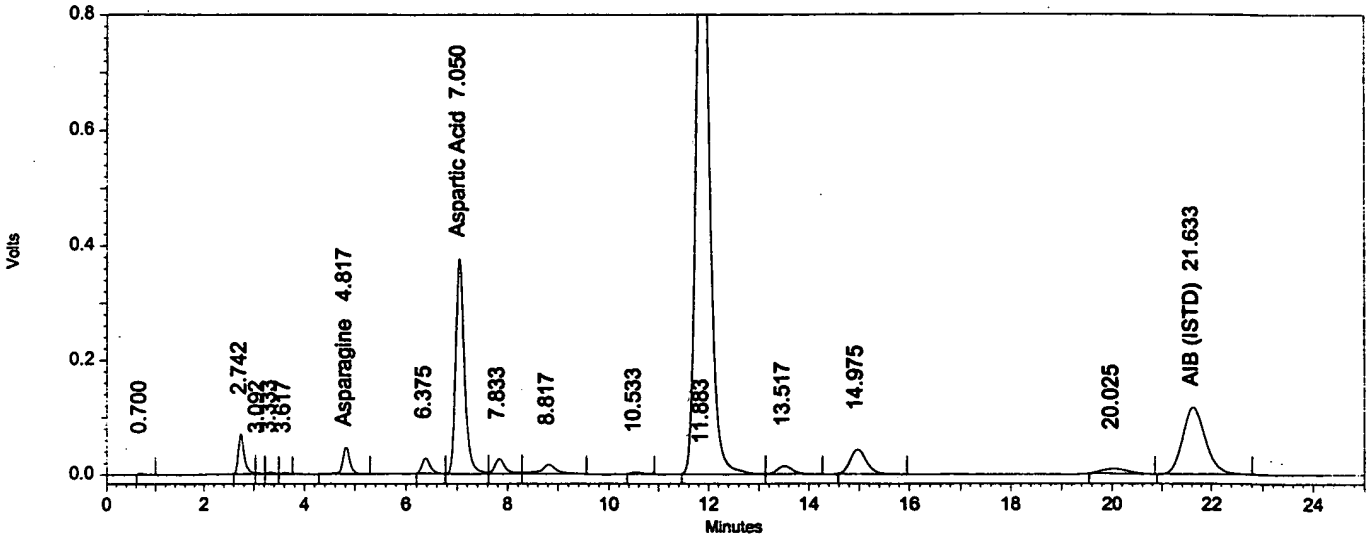

Sample Amount: 1

Multiplier Factor: 1

Fluorescence Detector (Ex:260nm, Em:313nm)

Pk #	Name	Retention Time	Area	ISTD concentration	Units
6	Asparagine	4.82	461708	129.529	ppm
8	Aspartic Acid	7.05	4562675	1307.031	ppm
16	AIB (ISTD)	21.63	3717360	0.000	ppm

Method Name: C:\CLASS-VP\METHODS\Asparagine extended.met
Sequence Name: C:\CLASS-VP\SEQUENCE\GLUCOSAMINE\02AUG07.seq
Data Name: C:\CLASS-VP\DATA\SORBEN\02AUG07-09
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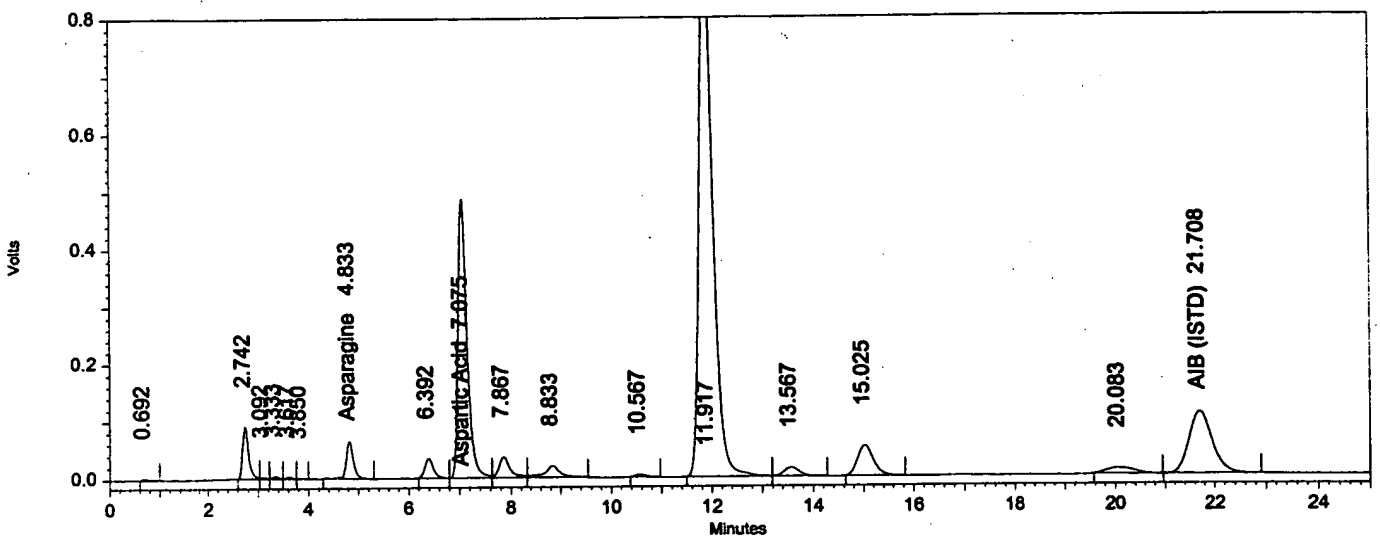


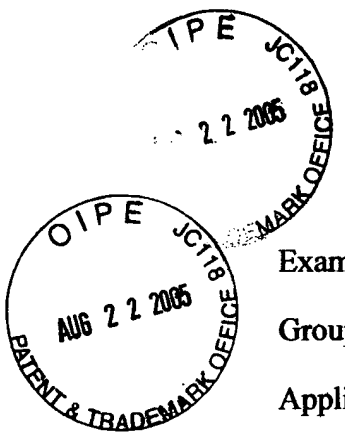
Sample Amount: 1

Multiplier Factor: 1

Fluorescence Detector (Ex:260nm, Em:313nm)

Pk #	Name	Retention Time	Area	ISTD concentration	Units
7	Asparagine	4.83	641523	195.516	ppm
9	Aspartic Acid	7.08	5932050	1826.512	ppm
17	AIB (ISTD)	21.71	3465326	0.000	ppm

EV619619415US



PATENTS
Attorney Docket No. 9043MXL

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner	:	Keith D. Hendricks
Group Art Unit	:	1761
Applicant	:	David Vincent Zyzak et al.
Application No.	:	10/606,137 Confirmation No.: 3971
Filed	:	June 25, 2003
For	:	METHOD FOR REDUCING ACRYLAMIDE IN FOODS, FOODS HAVING REDUCED LEVELS OF ACRYLAMIDE, AND ARTICLE OF COMMERCE

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Cincinnati, Ohio 45224
August 22, 2005

DECLARATION OF DEBORAH K. EWALD SUBMITTED WITH SUGGESTION OF INTERFERENCE WITH ELDER ET AL. APPLICATION NO. 10/247,504, PURSUANT TO 37 C.F.R. § 41.202

Sir:

I, Deborah K. Ewald, declare that:

1. I am a Principal Researcher in the Household Care Analytical Division of The Procter & Gamble Company ("P&G"), Winton Hill Business Center, 6300 Center Hill Avenue, Cincinnati, Ohio, 45224.

2. I understand that David Vincent Zyzak, Robert Alan Sanders, Marko Stojanovic, David Cammiade Gruber, Peter Yau Tak Lin, Maria Dolores Martinez-Serna Villagran, John Keeney Howie and Richard Gerald Schafermeyer ("Zyzak") are the named inventors of U.S. patent application Serial No. 10/606,137 (the "Zyzak '137 application"). I also understand that Zyzak is requesting that the U.S. Patent

and Trademark Office declare an interference between the Zyzak '137 application and Elder et al.'s U.S. patent application 10/247,504 (the "Elder '504 application"). I make this declaration in support of Zyzak's Suggestion of Interference with Elder et al. Application No. 10/246,504 pursuant to 37 C.F.R. § 41.202.

3. In 1974, I received a Medical Technology degree from Cincinnati State College.

4. I have been employed at P&G since 1975. In 1989, I was promoted to Senior Researcher in P&G's Foods Division. In 1999, I was promoted to Principal Researcher in P&G's Foods Division. In 2002, I was a Principal Researcher in P&G's Food and Beverage Analytical/Microbiology Division, which later changed its name to the Snacks and Beverage Analytical/Microbiology Division. In 2004, the name was changed again to Household Care Analytical. Today, I am a Principal Researcher in P&G's Household Care Analytical Division. Among my duties as a Principal Researcher is performing analytical work related to determining acrylamide levels in samples.

5. I am the author of numerous publications related to my research and development work in the food industry, and I have completed numerous in-house training programs related to various analytical methods.

6. On August 2, 2002, Dr. David V. Zyzak, a Senior Scientist in P&G's Foods and Beverages Analytical/Microbiology Division, submitted four samples to P&G's Foods and Beverages Analytical/Microbiology lab for analyses of acrylamide, asparagine and aspartic acid levels. The samples were in jars labeled A1, A2, E1 and E2.

7. I received a portion of each of the four samples (the "Portions") referred to above in paragraph 6 so that I could perform an analysis of the acrylamide levels. The Portions were in jars.

8. On August 2, 2002, Anthony Turley, a temporary P&G employee, performed an extraction on each of the four Portions to prepare them for Liquid Chromatography Mass Spectrometry ("LCMS") testing. I supervised Mr. Turley and reviewed his work. The extractions were performed using the following procedure:

i. The four jars containing the Portions were weighed, and the gross weights of the jars and their contents were noted (the "Gross Weights"). Then, 40 milliliters of water was added to each of the four jars, and the contents of each of the four jars were transferred to separate Erlenmeyer flasks (the "Flasks"). The weights of the empty jars were then noted (the "Tare Weights"), and the weights of the four Portions were obtained by subtracting the Tare Weights from the Gross Weights. The weights of each of the four Portions were recorded on an Acrylamide Worksheet, a true and correct copy of which is attached hereto as Exhibit A. I reviewed and signed Exhibit A on August 5, 2002. It shows that the Portions were received for acrylamide testing on August 2, 2002, and that the weights of the Portions in grams were 1.53 (A1), 1.68 (A2), 1.53 (E1) and 1.79 (E2).

ii. 40 microliters of isotope-labeled acrylamide at a concentration of 100 nanograms per microliter, in de-ionized and distilled water (the

"Acrylamide Standard"), was added to each of the four Flasks by pipette. Exhibit A reflects that 40 microliters of the Acrylamide Standard was added to each of the four Flasks.

iii. Next, the four Flasks were covered with foil and heated in a water bath at 65° C for 30 minutes.

iv. 10 milliliters of ethylene dichloride was then added to each of the four Flasks in order to bind fats, and the four resulting mixtures were homogenized for 30 seconds.

v. 25 grams from each of the four Flasks was then transferred into four separate 8-dram vials. The four 8-dram vials were then centrifuged for 30 minutes, and 8 grams of the supernatant from each of the four vials was transferred to four other 8-dram vials (the "Vials").

vi. Next, 10 milliliters of ethyl acetate was added to each of the four Vials. The resulting four mixtures were then vortexed for 10 seconds, and allowed to settle into two layers (the top layer is referred to as the "ethyl acetate layer," and the bottom layer is referred to as the "water layer").

vii. As much as possible of the ethyl acetate layer in each of the four Vials was separately transferred to four scintillation vials (the "Scintillation Vials").

viii. Next, the water layers left over in the Vials were extracted twice more. Each of these two extractions was performed by adding 5 milliliters of ethyl acetate to each of the four Vials. The resulting mixtures were

vortexed for 10 seconds, and then allowed to settle into two layers. As much as possible of the top ethyl acetate layer in each of the four Vials was separately transferred to the four Scintillation Vials.

ix. 2 grams of anhydrous sodium sulfate was then added to each of the four Scintillation Vials, which were then placed in a 60-65° C water bath under a gentle stream of nitrogen until the volume of liquid in each of the four Scintillation Vials was about 1 milliliter.

x. The liquid in each of the four Scintillation Vials was then separately transferred to four conical-shaped glass vials, which were placed in the 60-65° C water bath under a gentle stream of nitrogen until the volume in each of the four conical-shaped glass vials was 100 to 200 microliters. The liquid in each of the four conical-shaped glass vials was then separately transferred into four autosampler vials with conical sleeves (the "Autosampler Vials").

xi. The extractions in the Autosampler Vials were now ready for LCMS testing

9. On August 5, 2002, I tested the four extractions in the Autosampler Vials for acrylamide levels using a Waters 2690 Liquid Chromatograph interfaced to a Micromass LCZ mass spectrometer located in P&G's Foods and Beverages Analytical/Microbiology lab in Cincinnati, Ohio.

10. Attached hereto as Exhibit B is a true and correct copy of the results from the LCMS device.

11. On August 5, 2002, I performed a data analysis (the "Data Analysis") using the results from the LCMS device. The Data Analysis was performed in order to determine the acrylamide level in the Portions. The Data Analysis was performed as follows:

i. Using the results from the LCMS device, a response ratio for each of the four Portions was calculated by dividing the area under the curve for the acrylamide peak by the area under the curve of the isotope-labeled acrylamide peak. The isotope-labeled acrylamide was added to the Portions during extraction (see paragraph 8(ii), above).

ii. The response ratio for each of the four Portions was compared to concentration ratios for five standards that contain 4.5 micrograms per milliliter of isotope-labeled acrylamide, and non-isotope-labeled acrylamide concentrations ranging from 0 to 5 micrograms per milliliter.

iii. Linear regression of the data obtained by comparing the response ratios of the Portions to the concentration ratios for the five standards results in a calibration curve that allows the concentration ratio of the Portion to be determined. The acrylamide level in the Portion is determined by multiplying the concentration ratio of the Portion by the accurately known isotope-labeled acrylamide level in the Portion (see paragraph 8(ii), above).

12. On August 5, 2002, I tabulated the results of the Data Analysis in a spreadsheet, a true and correct copy of which is attached hereto as Exhibit C.

13. The Data Analysis shows that for the sample labeled A1, the acrylamide content was 21,605 parts per billion ("ppb"). For the sample labeled A2, the acrylamide content was 20,543 ppb. For the sample labeled E1, the acrylamide content was 385 ppb. For the sample labeled E2, the acrylamide content was 164 ppb.

14. On August 5, 2002, I provided a copy of Exhibit C to Dr. Zyzak.

15. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the Zyzak '137 application or any patent issuing therefrom.

Dated: August 10, 2005
Cincinnati, Ohio

Deborah K. Ewald 8-10-05
Deborah K. Ewald

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EXHIBIT A

Acrylamide Worksheet

Method#_____

Sample Prep. Date: 8-2-2002

SAFB#	AFB#	Description	Sample Wt. (g)	ISTD (µL)
5471	41948	WRM-2	6.00	120
		A1	1.53	40
		A2	1.68	40
		E1	1.53	40
		E2	1.79	40
5614	43024	COFFEE	6.00	120
5614	43025	COFFEE	6.00	120
5614	43026	COFFEE	6.00	120
5614	43027	COFFEE	6.00	120
5614	43028	COFFEE	6.00	120
5613	43014	WDG-339	6.00	120
5613	43015	WDG-340	6.00	120

Balance #: C82554 **Internal Standard (ppm):** 95

Observations
5.748g of SUPERNATANT DRAWN FROM SAMPLE#43024
6.230g of SUPERNATANT DRAWN FROM SAMPLE#43025
5.7388g of SUPERNATANT DRAWN FROM SAMPLE# 43026
5.633g of SUPERNATANT DRAWN FROM SAMPLE#43027, 5.706g of SUPERNATANT DRAWN
FROM SAMPLE #43028; GROSS Wt.= Wt of SAMPLE+GLASS JAR, TARE Wt.= Wt. of GLASS JAR TARE W 150.6
WEIGHT of SAMPLE # A1, A2, E1, E2 = (GROSS Wt. - TARE Wt.)

Analyst: Anthony Turley **Date:** 8/2/02

Reviewer: Deborah K. Ewald **Date:** 8/5/02

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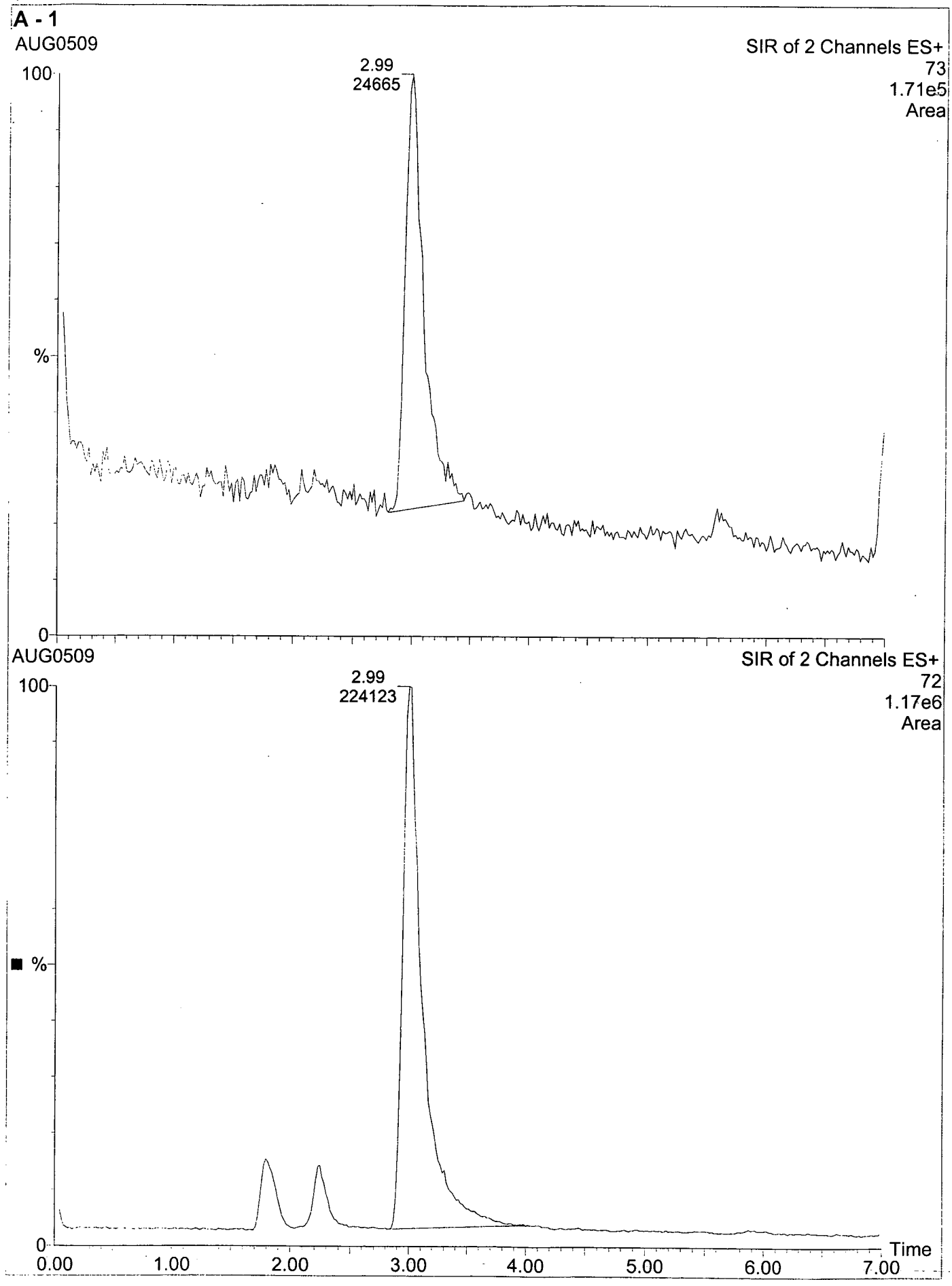
EXHIBIT B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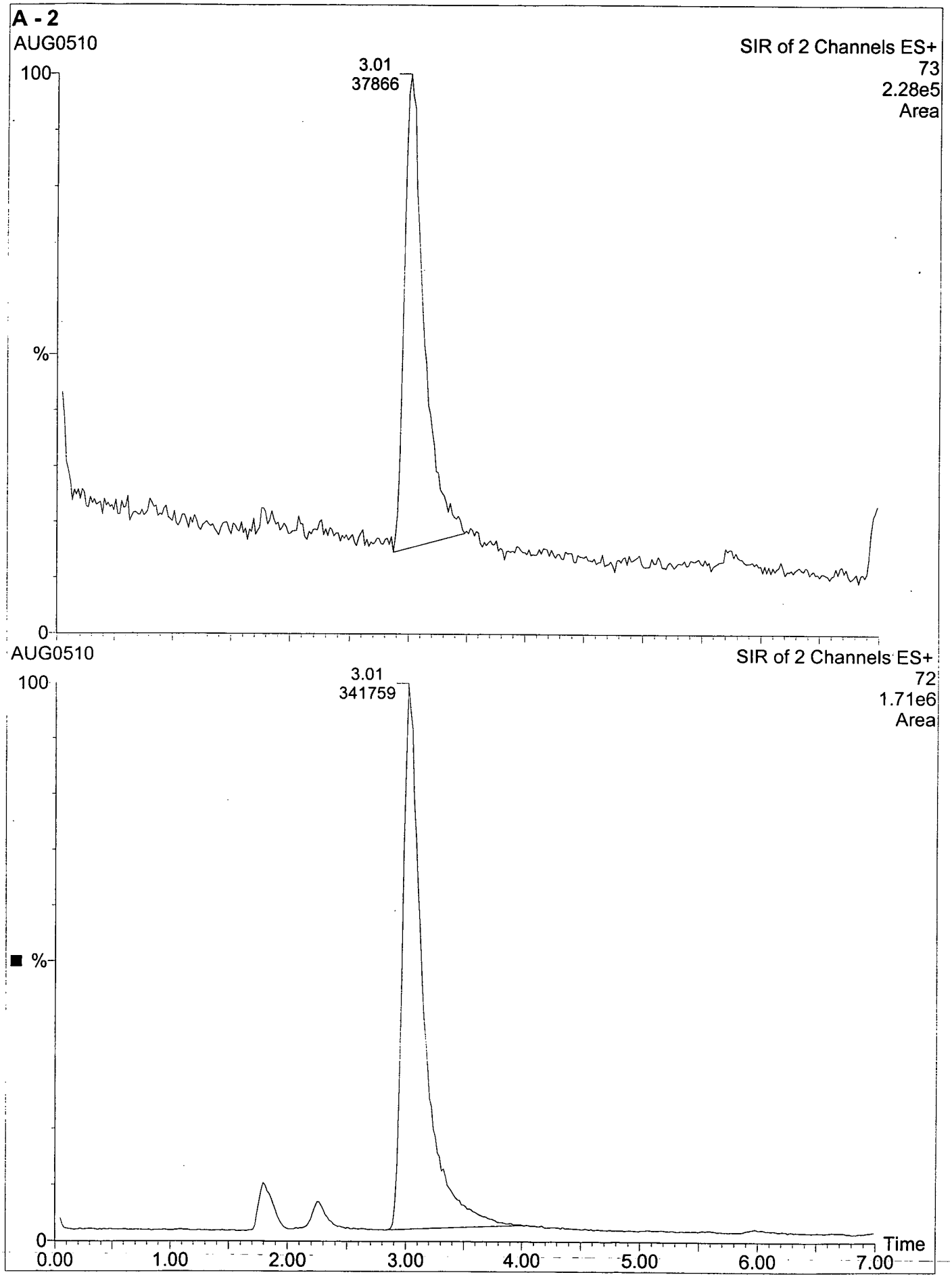
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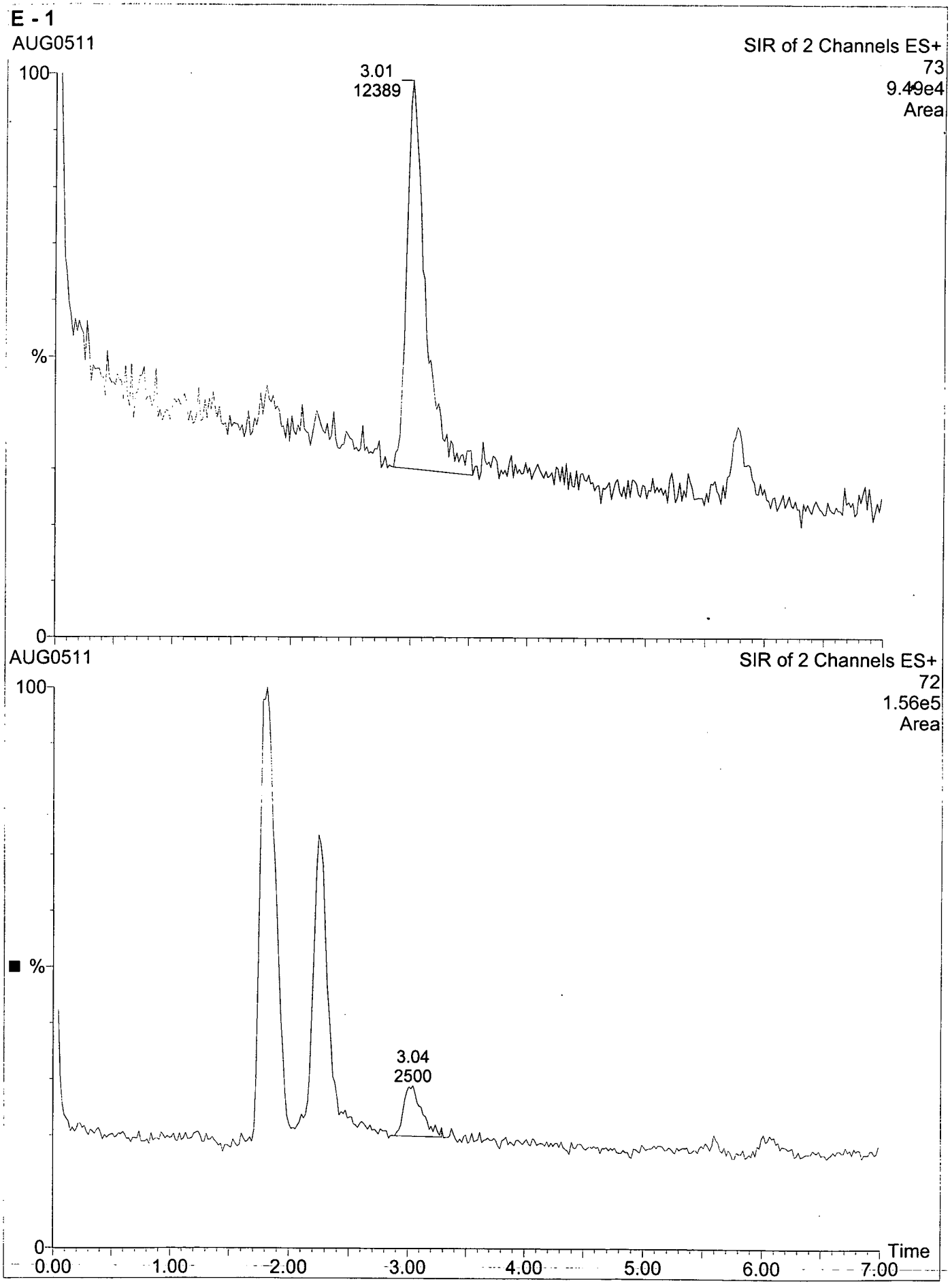
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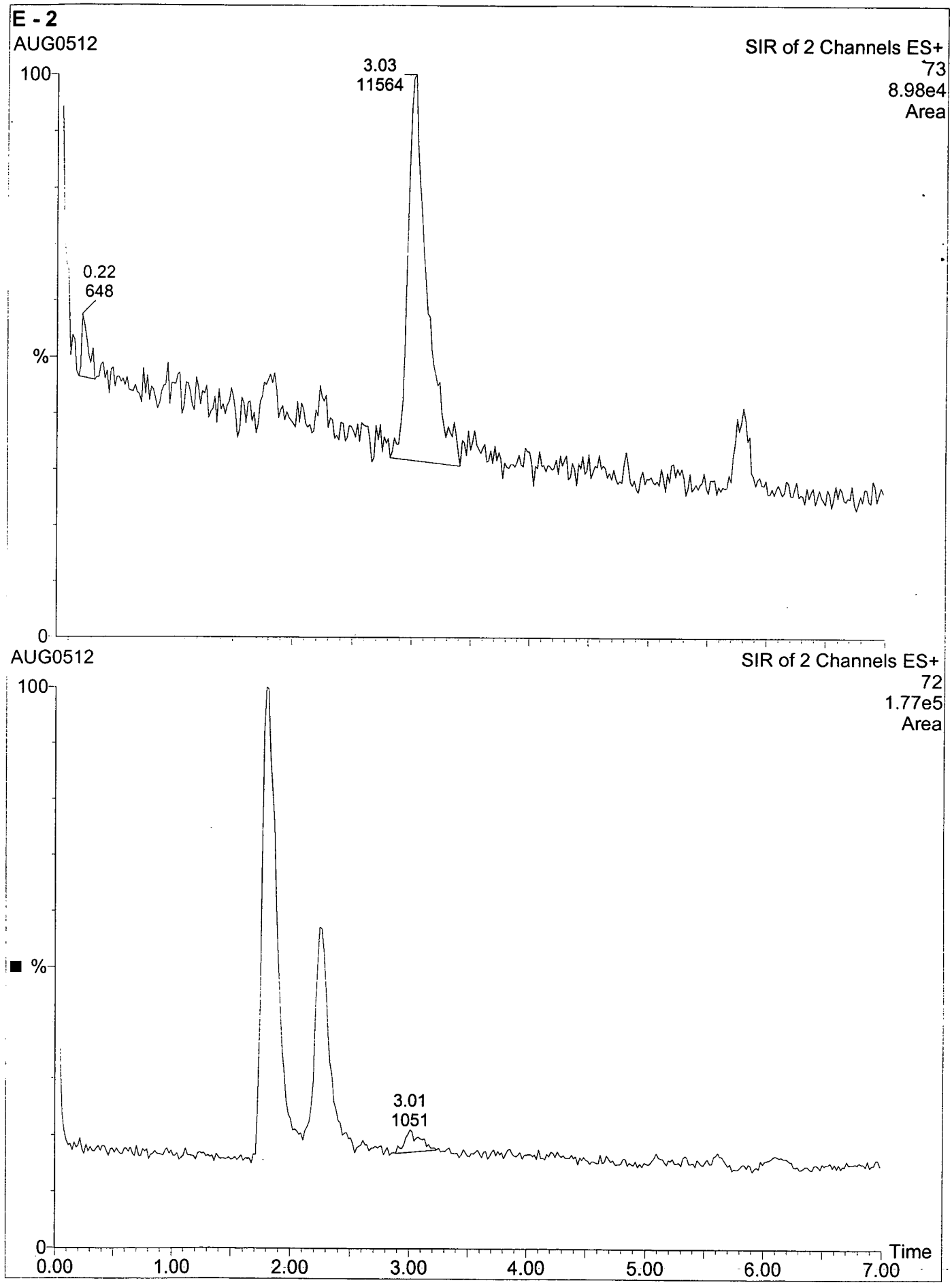
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EXHIBIT C

ACRYLAMIDE	**8/5/2002**			
Concentration Ratio	**Response Ratio**			
0	0.0072			
0.06	0.0608			
0.180	0.1664			
0.360	0.3292			
0.720	0.6951			
1.200	1.0922			
INTERCEPT	0.007			
SLOPE	0.92			
CORR.	0.9994			
SAMPLE	**Response Ratio**		**ppb**	
WRM - 2	0.1654	0.173	328	
A - 1	10.4205	11.371	21605	*
A - 2	9.9087	10.812	20543	*
E - 1	0.1926	0.202	385	
E - 2	0.0863	0.086	164	
Samples were extracted on 8/02/02,				
analyzed on 8/5/02.				
*** Out of range of calibration curve**				
50 - 2000 ppb.				

CustomStat 8.0.0 Runtime: 8/5/02 10:38:40 AM
Linear Regression Analysis - 1st Degree, Y=B(1)*X + B(0):
No. of Observations = 6
X Mean = 0.42000; Y Mean = 0.39182
Coeff of Det (r^2) = 0.99877; Corr. Coeff (r) = 0.99938
Std-Err-Estimate = 0.01659
% Relative Y Intercept for Y = 0.39182 is 1.83573; % Variation = 4.23482

Range = 0 - 1.2
Residual Sum of Squares = 0.00110
Intercept = 0.00719 Std. Err: 0.00956
Slope = 0.91577 Std. Err: 0.01607
T-ratio for 'Ho: Slope = 0' hypothesis = 56.97265
(95% Confidence Intervals) T = 2.77600
C.I. for the Intercept: -0.01936 to 0.03374
C.I. for the slope: 0.87115 to 0.96039